

AGRICULTURAL EDUCATION TEACHER SELF-EFFICACY:
A DESCRIPTIVE STUDY OF BEGINNING AGRICULTURAL EDUCATION
TEACHERS IN OHIO

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree of Doctor of Philosophy in the
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ABSTRACT

Because teacher self-efficacy influences the retention of teachers, the researcher investigated teacher self-efficacy in agricultural education. The researcher sought to describe beginning agriculture teachers' perceived agricultural education teacher self-efficacy and teachers perceptions of the importance of job-related factors in their current position. Additionally, the researcher sought to describe the relationship among teachers demographic characteristics, their agricultural education teacher self-efficacy, and their intention to remain in the profession of agricultural education. An instrument specific to agricultural education was developed to answer the research questions. The instrument had three domains: classroom, FFA and SAE. The instrument was administered through both an internet based survey provider and mailed survey procedures.

Beginning teachers in this study all had less than four years of teaching experience. Almost all of the teachers intended to remain in the profession of agricultural education. Teachers reported favorable perceptions of their student teaching experience and their first year of teaching.

Teachers were the most efficacious in the classroom domain, and the least efficacious in the SAE domain. This finding indicates a need for additional professional development in the SAE domain. Beginning teachers in this study reported greater levels of importance than teacher self-efficacy in all three domains. Teachers indicated that the

FFA domain was the most important of the three domains and the classroom domain was the least important. This finding indicates that a paradigm shift may be required amongst teachers. The SAE domain had the greatest discrepancy between importance and teachers self-efficacy, the classroom domain had the smallest discrepancy. This conclusion further substantiates the need for professional development in the SAE domain.

The teachers perceptions of their student teaching experience and their first year of teaching were positively related to their teacher self-efficacy. Males had higher teacher self-efficacy than females. Teachers who were not involved in high school agricultural education or FFA had lower teacher self-efficacy in the SAE and FFA domain, but higher teacher self-efficacy in the classroom domain. The researcher was unable to predict teacher retention as nearly all of the teachers indicated they intended to remain in the profession of agricultural education.

To my parents – they have been my best teachers.

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CHAPTER 1

INTRODUCTION

**"If I have the belief that I can do it,
I shall surely acquire the capacity to do it,
even if I may not have it at the beginning."**

~ Mahatma Gandhi ~

Self-efficacy – the beliefs individuals have in their own capabilities – is a key component to success (Bandura, 1986). The idea that the self-beliefs of teachers, (teacher self-efficacy beliefs) are determinants of their success is a deceptively simple, yet powerful idea (Tschannen-Moran & Woolfolk Hoy, 2001). Bandura stated that “Persons who have a strong sense of efficacy deploy their attention and effort to the demands of the situation and are spurred by obstacles to greater effort” (1986, p. 394). Teaching carries with it tremendous responsibilities, and must, therefore, be carried out by individuals who accept and relish that responsibility. Teachers must believe that they can make a difference in the lives of their students; “self-belief does not necessarily ensure success, but self-disbelief assuredly spawns failure” (Bandura, 1997, p. 77). “It [teacher self-efficacy] appears to be one of the few personal characteristics of teachers that is correlated with student achievement” (Woolfolk, 2007, p. 334).

The self-beliefs of a teacher, teacher self-efficacy, must withstand the difficulties and complexities inherent to teaching. “The task of creating learning environments conducive to development of cognitive competencies rests heavily on the talents and self-efficacy [teacher self-efficacy] of teachers” (Bandura, 1997, p. 240). Croom (2003) stated, “The job of being an agricultural education instructor is both demanding and challenging” (p. 1). Further, “Becoming a teacher of agriculture is a complex endeavor requiring a great deal of commitment and a strong work ethic on the part of the teacher” (Phipps, Osborne, Dyer, & Ball, 2008). Agricultural education in high schools, by the nature of the program, brings an additional set of responsibilities, and, therefore, possible difficulties to beginning teachers. The additional responsibilities of advising the FFA chapter and supervising the students’ supervised agricultural education programs (SAE’s) increase the challenges and demands for a beginning agriculture teacher. “As induction assistance programs are planned for beginning agriculture teachers, some consideration for those unique needs should be taken into account” (Talbert, Camp, & Heath-Camp, 1994, p. 35). A high sense of teacher self-efficacy can be instrumental to a beginning agricultural educator’s success and, therefore, retention in the profession.

Teacher education programs can prepare teacher candidates to an extent, however, the experience of student teaching and the pedagogical content knowledge espoused in teaching methods courses cannot fully simulate the experience of a beginning teacher. “The goal for preservice preparation . . . is to provide teachers with the core ideas and broad understanding of teaching and learning that give [sic] them traction on their later development” (Darling-Hammond & Bransford, 2005, p. 3). Therefore, beginning teachers may encounter difficulties in their first few years of teaching they have not

specifically been prepared for in their teacher preparation program. The study of the beliefs of agriculture teachers regarding their abilities to affect positive change in specific tasks is essential to addressing and overcoming the difficulties facing beginning agricultural educators.

Past research has identified some of the difficulties facing beginning teachers of agriculture. The most common problems have been classroom management, the FFA chapter, organizing alumni and advisory committees, curriculum development, and time management (Garton & Chung, 1996; Mundt & Connors, 1999; Myers, Dyer, & Washburn, 2005). Although the issues facing beginning agriculture teachers have been researched extensively, the same problem areas reoccur throughout published research. Therefore, it appears that no appreciable improvements have been made in increasing the abilities of teachers to deal with these issues, and more research is required. Needs assessments of teachers have been conducted using the Delphi method, yet, usually only in a single state at a time (Myers, Dyer, & Washburn, 2005; Mundt & Connors, 1999). Past studies did not, for the most part, measure teacher self-efficacy in areas specific to agricultural educators, nor did they attempt to identify the discrepancy between teacher self-efficacy and teachers' perceptions of the importance of those areas relative to their agriculture program.

Agricultural education is a diverse field, with curricular and programmatic changes differing from state to state, and even within states. Phipps, Osborne, Dyer and Ball (2008) stated, "Agricultural educators are community oriented . . . Agriscience teachers realize that their instructional programs must reflect the nature and scope of agriculture in the local community" (p. 9). Therefore, identifying areas specific or unique

to each program is essential. Past studies did not, for the most part, assess the importance of job-related tasks from the perspective of the teacher. However, Garton and Chung (1996) used the Borich needs assessment model to assess the perceived level of importance and the perceived level of competence regarding 50 professional teaching competencies to determine in-service needs in the state of Missouri. Duncan and Ricketts (2006) assessed teacher self-efficacy in areas specific to agricultural educators, comparing teachers' perceived competence to the importance of those factors in their individual agricultural education programs.

Teacher preparation programs, including experiences during student teaching, have powerful influences on teacher self-efficacy (Woolfolk, 2000). At The Ohio State University, teacher preparation in agricultural education occurs in the Department of Human and Community Resource Development. The agricultural education teacher program was re-designed in 2002 by the teacher education faculty of the Department of Human and Community Resource Development. The redesigned program was entitled *A New Vision for Undergraduate Education* (Cano, Whittington, Connors, & Knobloch, 2002). The teacher education faculty reviewed extensive literature on teacher education reform, analyzed current standards impacting teacher preparation, and participated in a 10-week seminar on teacher education reform. The resulting model for the program is presented in Figure 1.

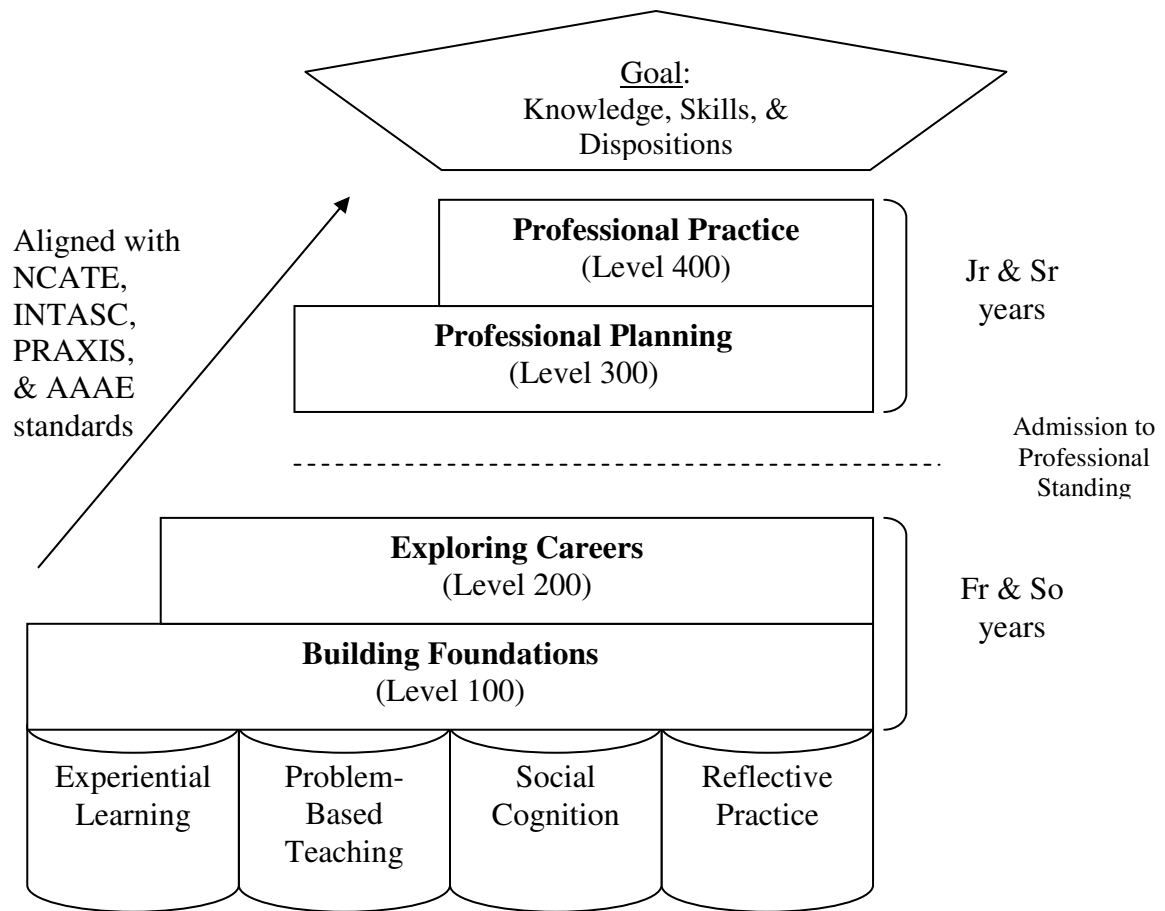


Figure 1. The model of teacher preparation in agriculture. (Cano, Whittington, Connors, & Knobloch, 2002, p. 1)

The program is a four-year undergraduate program, the purpose being “. . . to develop professional educators based on knowledge grounded in the social and behavioral sciences for careers in public schools, Extension, and agribusiness education and training” (Cano, Whittington, Connors & Knobloch, 2002, p. 1). The mission and purpose of the program was grounded in the philosophical and theoretical base of:

- learning-by-doing through a practical education (Knapp, 1894; Lever, 1952);
- experiential learning (Dewey, 1938; Kolb, 1984);

- solving real problems (Lancelot, 1944);
- social cognition (Rotter, 1966) and human agency (Bandura, 1997);
- andragogy (Knowles, 1989); and,
- reflective practice (Schon, 1989).

The agricultural education program at The Ohio State University is designed to develop the knowledge, skills, and dispositions in technical, pedagogical, and professional knowledge areas necessary for professional agricultural educators. Only students preparing for student teaching internships the following fall are enrolled in the spring quarter teacher preparation courses(the Block), allowing for a cohort to form. The Block includes courses in teaching methodology, experiential learning (FFA/SAE, the associated youth organization and the Supervised Agricultural Education program), pedagogy and laboratory management, classroom media and technology, and off-campus field experiences. Although the field experiences vary from year to year, typically, the students visit an urban agricultural education program, the state FFA camp, a suburban agricultural education program, and may visit a variety of agricultural education programs. The model allows for intensive preparation prior to the student teaching experience. This study will examine one of the theories in which the agricultural education teacher preparation program at The Ohio State University is grounded; human agency (Bandura, 1997), through the examination of teacher self-efficacy. Woolfolk, (2007) defines teacher self-efficacy as “a teachers belief that he or she can reach even difficult students to help them learn” (p. 334). Woolfolk recommended using the term either teachers’ sense of efficacy or self-efficacy of teachers as, “. . . the term ‘teacher efficacy’ is too often confused with teacher ‘effectiveness’ . . .” (Shaughnessy, 2004, p.

154). The terms teacher self-efficacy and teacher efficacy are often used interchangeably in the literature, however, the present study will utilize the term *Teacher Self-Efficacy*.

The state of Ohio had 309 agricultural education programs in the 2007-2008 school year (Ohio Department of Education [ODE], 2008a). Programs in Ohio are classified as: Agribusiness and Production Systems, Animal Science and Management, Agricultural and Industrial Equipment/Power Technology, Food Science, Horticulture, and Natural Resources. The majority of programs (330) are classified as Agribusiness and Production Systems. Eighty- three of the programs were classified as Horticulture programs in 2007-2008; and between 5 and 36 programs in the other areas (ODE, 2008a).

Although some research in the area of teacher self-efficacy specific to agricultural educators has been published, no consensus of findings is evident, nor is the literature base in this area vast. This line of inquiry has been published in agricultural education for less than seven years, and, because of the positive correlation with student achievement, the construct merits further and more thorough investigation. The investigation of characteristics of agricultural education teachers that may affect recruitment, preparation, and retention is essential to improve those areas. Existing research has been conducted using general measures of teacher self-efficacy, which contradicts the recommendation from Bandura (2006) to address specific components of a required task. “The ‘*one measure fits all*’ approach to measuring teacher self-efficacy usually has limited explanatory and predictive value because most of the items in an all-purpose test may have little or no relevance to the domain of functioning” (Bandura, 2006, p.307). Further investigation into areas that are integral to an agricultural educator’s position will benefit and inform teacher preparation and teacher professional

development in agricultural education. Research is needed on a state and national basis to assess beginning agricultural education teacher self-efficacy in job-related factors and their perceived importance of job-related factors. This research will support the National Research Agenda for Agricultural Education and Communication, specifically Research Priority Four in the area Agricultural Education in Schools: *Prepare and provide an abundance of fully qualified and highly motivated agriscience educators at all levels.* The Priority Initiative this research study most closely address is: *Identify and analyze variables that contribute to teacher success* (Osborne, n.d.).

Statement of the Problem

Agricultural education, at the secondary school level, faces a critical teacher shortage. Kantrovich (2007) estimated a teacher deficit of 38.5% for 2007. Of the 785 qualified graduates in 2005-2006, professors estimated that 69.8% of the graduates planned to enter the profession of agricultural education. The required number of teachers was estimated at 652, with an estimated 547 graduates entering the profession (Kantrovich, 2007). The projected shortage necessitated the closure of approximately 40 agricultural education programs, due to the lack of a qualified teacher (Kantrovich, 2007). Personnel turbulence was a factor in the teacher shortage, with 13.1% of agriculture teachers moving between schools in 2006. Nationally, approximately eight percent of teachers with three years of experience or less left the teaching profession in the 2004-2005 school year, while about 15 percent moved to another school (National Center for Educational Statistics, 2007). Earlier data on the teacher shortage indicate that

more than one-third of beginning teachers leave teaching during the first three years, and almost one-half leave after five years (Ingersoll, 2001).

The agriculture teacher shortage is not a new trend; “A de-facto ‘teacher shortage’ has been a constant problem for agricultural education for at least the 40 years covered by this study” (Kantrovich, p. 3, 2007). The 1999-2001 American Association for Agricultural Education Supply & Demand survey found that the number of newly qualified potential agriculture teachers actually seeking employment fell far short of the 7.3% needed replacements in 2001 (Camp, 2002), with an estimated 59.4% of qualified graduates in agricultural education entered the teaching profession in 2001. “This (potential teachers, placement, and the teacher shortage) has the potential to reach epidemic proportions if we are unable to recruit additional students into the field of agricultural education and the continued growth in secondary agricultural education programs” (Kantrovich, p. 37, 2007). Adding to low number of graduates of agricultural education programs entering the teaching profession, are a “large number” of agriculture teachers leave the profession early in their careers (Myers, Dyer, & Washburn, 2005).

Increasing the number of agricultural education programs has the potential to exacerbate the teacher shortage. According to the 2005-2006 Annual Report on Agricultural Education (Team AgEd, 2007), the 10X15 initiative has set a goal of 10,000 quality agricultural education programs by the year 2015. The goal specific to recruiting a highly qualified educator supply is, “meet the demand for well-trained, highly qualified agricultural educators for all roles within the profession and encourage their involvement in appropriate professional organizations” (p. 18). The attainment of this goal is measured by “The percentage of hiring organizations reporting that all openings attracted a

minimum of three fully qualified candidates” (p. 18). If these goals are to be met, then new teachers must be attracted to the profession and retained in the profession.

Beginning teachers typically face obstacles. In a study of beginning agriculture teachers, some of the problems they faced were: the conditions of the physical facilities, classroom management and discipline problems, global organizational issues, managing the FFA component, a need for more supervision and help from the principal, curriculum scope, sequence and pace, and problems dealing with pedagogy (Mundt, 1991). These teachers often experience feelings of confusion, frustration, and isolation. Croom (2003) found a negative relationship between teacher age and depersonalization (a component of teacher burnout). A high sense of teacher self-efficacy may combat the causes of teacher burnout. “Novice teachers completing their first year of teaching who had a high sense of teacher efficacy [teacher self-efficacy] found greater satisfaction in teaching, had a more positive reaction to teaching, and experienced less stress” (Woolfolk Hoy, 2000, p. 6). Additionally, Bandura (1994) stated “People with a high sense of efficacy have the staying power to endure the obstacles and setbacks that characterize difficult undertakings” (p. 77).

Teacher self-efficacy is related to plans to stay in the profession of teaching (Evans & Tribble, 1986; Darling-Hammond, Chung, & Frelow, 2002). Therefore, to retain teachers, they must believe that they are competent in the tasks they are required to perform as agricultural educators. Assessing this perceived competency, by determining agricultural educator’s teacher self-efficacy in job-specific tasks, will inform teacher preparation about areas in which teachers believe they are unable to affect change. The assessment of these areas, combined with teachers’ perceptions of the importance of those

specific areas and tasks to their program will create a model to assist teacher educators in preparing teacher candidates to be proficient as agricultural educators. Therefore, the investigation into the construct of teacher self-efficacy is appropriate in agricultural education as the profession attempts to recruit new teachers and retain current teachers. This study is based on the premise that teachers with a high sense of teacher self-efficacy in important job-related areas will be more likely to remain in the profession longer than teachers with low teacher self-efficacy (Bandura, 2004; Darling-Hammond, Chung, & Frelow, 2002).

Purpose of the Study

The purpose of this research study was to describe the teacher self-efficacy of beginning agriculture teachers. The following research objectives were used to guide the study.

Objectives of the Study

1. Describe the demographic characteristics of beginning agricultural education teachers.
2. Describe the perceived teacher self-efficacy of beginning agricultural education teachers.
3. Describe beginning agricultural education teachers' perceived level of importance of job-related factors.
4. Describe the discrepancy between teacher self-efficacy of beginning agricultural education teachers and their perceived level of importance of job-related factors.

5. Describe the relationship among demographic characteristics of beginning agricultural education teachers and their perceived level of teacher self-efficacy.
6. Describe the relationship among teacher self-efficacy, demographic characteristics of beginning agricultural education teachers and their intentions to remain in the profession.

Significance of the Study

The results of this study will add to the literature base on teacher self-efficacy in agricultural education by identifying beginning agricultural educators' levels of teacher self-efficacy in specific job-related factors. Additionally, the results of this study will be used to describe beginning teachers perceptions of the importance of those factors. The development of a teacher self-efficacy measurement instrument specific to agricultural educators will permit future research specific to agricultural education, rather than the general measurements used in the past. Friedman and Kass (2002) indicated a need for research that extended the definition of teacher self-efficacy to include a more realistic description of teacher professional functioning and teaching context. The investigation of job-related tasks specific to agricultural education addresses the concerns expressed by Friedman and Kass (2002).

The results of this study will be used to identify the discrepancy between agricultural educators teaching self-efficacy in specific job-related factors and their perceptions of the importance of those factors in their current teaching position. Identifying these needs gaps between teacher self-efficacy and importance will be useful in identifying areas in which beginning teachers may need professional development and

areas where teacher preparation may need adjustment. The results of this study will also inform teacher preparation by identifying important job-related factors for current teachers, allowing for adjustments in the teacher preparation curriculum to address important areas.

The implications of this research will reach both teacher education in agricultural education and schools with agricultural education programs. Schools will benefit from the knowledge about teacher self-efficacy. The professional development of teachers, including beginning teacher induction programs and mentoring programs could be affected by this study, as it will identify areas in which current beginning teachers have lower teacher self-efficacy, and, therefore, may require professional development in those areas. School administrators will benefit from the knowledge of areas where agricultural educators report a low sense of teacher self-efficacy, as those are areas where professional development may be needed. The description of areas that teachers perceive as important will also assist school administrators in policy making decisions. Students will benefit from the results of this study, as it has the potential to improve teacher preparation and teacher professional development, thus improving the overall job performance of agricultural educators.

Limitations of the Study

As this study was conducted with beginning high school teachers in agricultural education, the generalizability of the results is limited. The study was a census of Ohio Agricultural Educators who have been teaching one to four years. The population was limited to those teachers who had graduated from the agriculture teacher preparation

program in the Department of Human and Community Resource Development at The Ohio State University. The study frame was limited to beginning teachers with four or less years of experience as the teacher preparation program at The Ohio State was redesigned in 2002 (Cano, Whittington, Connors, & Knobloch); only graduates from 2004 and later had experienced the fully re-designed program. Therefore, the results of this study cannot be generalized to agricultural educators in other states, teachers in other disciplines who have been teaching one to four years, or agricultural educators in Ohio with more than four years of experience.

Definitions of Terms

Intention to remain in the profession: In this study, intention to remain in the profession was assessed by a single dichotomous item that determined participants intentions to remain in the profession of agricultural education the following year.

Perceived importance: The value or significance placed on an item. In this study, perceived importance was measured using a researcher-developed instrument with three distinct domains: Classroom, FFA, and SAE. The *perceived importance in classroom* domain was measured on a nine point summated rating scale with 20 items. The *perceived importance in FFA* domain was measured on a nine point summated rating scale with 17 items. The *perceived importance in SAE* domain was measured on a nine point summated rating scale with 13 items.

Perceived teacher self-efficacy: A teachers judgment about his or her capabilities to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated” (Tschannen-Moran & Woolfolk Hoy,

2001, p. 1). In this study, the term teacher self-efficacy will be used, rather than teacher efficacy or teachers sense of efficacy. In this study, teacher self-efficacy was measured using a researcher-developed instrument with three distinct domains: Classroom, FFA, and SAE. The *teacher self-efficacy in classroom* domain was measured on a nine point summated rating scale with 20 items. The *teacher self-efficacy in FFA* domain was measured on a nine point summated rating scale with 17 items. The *teacher self-efficacy in SAE* domain was measured on a nine point summated rating scale with 13 items.

CHAPTER 2

REVIEW OF RELATED LITERATURE

"Whether you think that you can or you can't, you're usually right."

~ Henry Ford ~

The theoretical foundation of this study was grounded in the theory of self-efficacy (Bandura, 1977). Self-efficacy is defined by Bandura (1994) as “people’s beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives (p. 1). This theory postulates that efficacious individuals have intrinsic interest and deep engrossment in activities. Individuals with a high sense of self-efficacy approach threatening situations with the assurance they can exercise control over them and they have the staying power to overcome obstacles and set-backs (Bandura, 1994). The theory of self-efficacy has been applied to teachers and labeled *teacher self-efficacy*. This construct is defined as “...a teacher’s belief that he or she can reach even difficult students to help them learn... it, [teacher self-efficacy] appears to be one of the few personal characteristics of teachers correlated with student achievement” (Woolfolk, 2007, p. 334).

A teacher with a higher sense of teacher self-efficacy is more confident about their abilities and, therefore, more likely to stay in the profession. “Taking seriously the potency of efficacy beliefs to impact teacher motivation and persistence over the course

of a career could also well lead to a rethinking of the induction-year experiences of novice teachers, allowing for greater protection and support” (Tschannen-Moran & Hoy, 2001, p. 803). Self-efficacy in classroom management was found to have a longitudinal effect on components of teacher burnout (Brouwers & Tomac, 2000). Teacher self-efficacy has been associated with student motivation, the adoption of innovations by teachers, teacher competence as rated by superintendents, classroom management strategies of the teacher, time spent teaching certain subjects, and teachers referrals of students to special education (Woolfolk, 2000). The full and rich understanding of teacher self-efficacy is an essential component of teacher preparation, induction, and mentoring.

Social Cognitive Theory

The theory of self-efficacy is derived from, and is a part of, social cognitive theory (Bandura, 1986). Social cognitive theory is used to explain how people acquire and maintain certain behavioral patterns. Bandura’s theory identifies four core features of human agency: intentionality, forethought, self-reactiveness, and self-reflectiveness (Bandura, 2004). Social cognitive theory is rooted in a view that individuals are agents proactively engaged in their own development and can make things happen by their actions. In the social cognitive view people are neither driven by inner forces nor automatically shaped and controlled by external stimuli. Rather, human functioning is explained in terms of a model of triadic reciprocity in which behavior, cognitive and other personal factors, and environmental events all operate as interacting determinants of

each other. (Figure 2) The nature of persons is defined within this perspective in terms of a number of basic capabilities (Bandura, 1986, p.18).

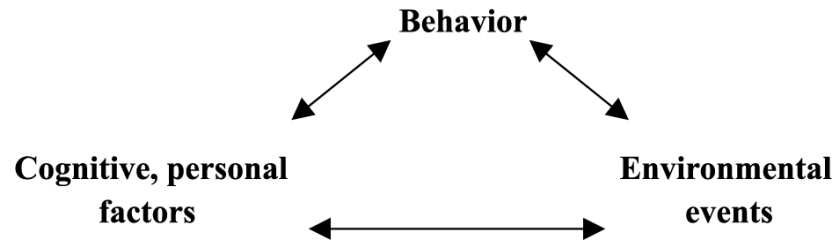


Figure 2: Conceptual model of triadic reciprocity in Social Cognitive Theory. (Bandura, 1986)

Key to social cognitive theory is the fact that, aside from personal and environmental factors, individuals possess self-beliefs that enable them to exercise a measure of control over their thoughts, feelings, and actions. The idea that an individual has the potential to influence change, regardless of his/her skills, is central to social cognitive theory (Pajares, 2002).

Self-Efficacy Theory

Perceived self-efficacy is “. . . peoples’ judgments of their capabilities to organize and execute courses of action required to attain designated types of performances. It is [sic] concerned not with the skills one has but with judgments of what one can do with whatever skills one possesses” (Bandura, 1986, p. 391). Self-efficacy beliefs are one of the strongest, if not the strongest, predictor of human motivation and behavior. A strong sense of self-efficacy enhances accomplishment and personal well-being in part because

of an individuals' beliefs in their own potential to influence the outcome. Individuals with a high sense of self-efficacy often exhibit an intrinsic interest and tend to be deeply engrossed in their activities; they set challenging goals and maintain a strong commitment to achieving those goals. Individuals with a high sense of self-efficacy approach threatening situations with greater confidence, feeling they have at least some ability to exert an influence and/or a degree of control over the situation. Individuals with low self-efficacy tend to doubt their ability or potential to influence an outcome, generally avoid difficult or threatening situations, dwell on personal deficiencies when faced with difficult tasks, slacken efforts and give up in the face of adversity, and are slow to recover from failure (Bandura, 1994).

Self-efficacy and outcome expectancy are interrelated constructs. Outcomes occur as a result of actions, therefore, the outcomes individuals expect depend largely on judgments of how well they would perform in a given situation. "In social, intellectual, and physical pursuits, those who judge themselves highly efficacious will expect favorable outcomes, self-doubters will expect mediocre performance of themselves and thus negative outcomes" (Bandura, 1986, p. 392).

Self-efficacy and self-esteem are often used in the same context. However, the terms should not be used interchangeably based on the literature addressing the two constructs. Woolfolk (2007) noted that self-efficacy is concerned with judgments of personal capabilities and capacity, whereas self-esteem is concerned with judgments of self worth. Self-efficacy focuses on an individual's potential influence in a given situation and more specifically the ultimate outcome, whereas self-esteem focuses on a value judgment of the worth of an individual. For example, a professional basketball

player may have a high sense of self-efficacy in regards to their abilities to dribble a basketball, but may, for other reasons have low self-esteem. In contrast, an individual with high self-esteem or self-worth may have low self-efficacy toward playing basketball, but as they do not base their self-worth on their abilities to play basketball, their low self-efficacy in basketball does not effect their overall self-esteem.

Sources of Self-Efficacy

Individual self-efficacy is derived from four main sources: mastery experiences, physiological and emotional states, vicarious experiences, and social persuasion (Bandura, 1994). Mastery experience is the most effective way to foster a strong sense of self-efficacy (Bandura, 1994). Success at a task as builds self-efficacy, while failure undermines a sense of self-efficacy. “Successes build a robust belief in one’s efficacy” (Bandura, 2004). However, experiencing easy success could lead to someone being easily discouraged by failure. After individuals are convinced they have the ability to succeed at a task, they are much more resilient in the face of failure. This resilience allows them to manage failure and learn from their mistakes, rather than becoming demoralized.

Physiological and emotional states affect self-efficacy. “In judging their capabilities, people rely partly on somatic information conveyed by physiological and emotional states” (Bandura, 1997, p. 106). When individuals reduce stress reactions and alter negative tendencies in the face of adversity, their sense of self-efficacy increases. Individuals who interpret their stress reaction and tension as signs of vulnerability have decreased self-efficacy (Bandura, 1994).

Vicarious experiences, “. . . seeing or visualizing people similar to oneself perform successfully typically raises efficacy beliefs in observers that they themselves possess the capabilities to master comparable activities” (Bandura, 1997, p. 87). However, seeing a peer strive to accomplish a task, then fail, can undermine the observer’s self-efficacy. Modeling is a form of vicarious experience; an individual modeling a behavior must ensure that the level of performance is reachable by the observer (Bandura, 1994).

Social persuasion occurs when an individual is convinced or persuaded by another that he/she has the capabilities to be successful at a task. “If people are persuaded that they have what it takes to succeed, they exert more effort than if they harbor self-doubts and dwell on personal deficiencies when problems arise” (Bandura, p. 622, 2004). However, social persuasion has the potential to undermine an individual’s belief in their abilities much more quickly than instilling belief. False persuasion can also be a detriment to self-efficacy, if the required performance is unattainable by the individual (Bandura, 1994).

An individual’s belief in their efficacy drives and controls the majority of their actions, the effort they put forth in various endeavors, and their level of perseverance (Bandura, 1994). Perceived self-efficacy effects resiliency to adversity, levels of stress and depression, and levels of accomplishment. Bandura regards self-efficacy as one of the most important factors in an individuals behavior under the social cognitive theory. “Beliefs of personal efficacy constitute the key factor of human agency. If people believe they have no power to produce results, they will not attempt to make things happen” (1997, p. 3).

Teacher Self-Efficacy

Researchers have expanded and refined Bandura's original description of self-efficacy to the context of teachers and teaching. Tschannen-Moran and Woolfolk Hoy (2001) suggested that teacher self-efficacy was a simple idea with significant implications. The authors described teacher self-efficacy as "... a judgment about his or her capabilities to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated" (p. 1). Woolfolk (2007) noted that teacher self-efficacy is one of the few personal characteristics of teachers positively correlated with student achievement. A positive sense of self-efficacy is essential for a teacher. Bandura (1997) stated "the task of creating learning environments conducive to development of cognitive competencies rests heavily on the talents and self-efficacy of teachers" (p. 240). Woolfolk Hoy and Hoy (2009) suggested that teacher self-efficacy is a powerful construct because of its cyclical nature, and that "... helping teachers develop a strong sense of efficacy beliefs early in their career will pay lasting dividends" (p. 169).

Teachers with high teacher self-efficacy believe students who are unmotivated are still teachable through extra effort and they can enlist support from the school, or the student's family and community to influence the student. A teacher with low teacher self-efficacy believes there is little they can do to reach unmotivated students, and the teachers influence is limited by environmental factors. A teacher with high teacher self-efficacy would be more likely to create dynamic, student-centered learning environments where students take ownership of their learning, while a teacher low teacher self-efficacy would devote more time to non-academic, managerial-like tasks (Bandura, 1997).

Teacher self-efficacy is related to teacher behavior, level of effort, enthusiasm, planning, resoluteness, creativeness, willingness to work with more difficult students, and commitment to teaching (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). Teachers with high teacher self-efficacy believe they can overcome problems through time and effort, while teachers with low teacher self-efficacy are typically beset with discipline issues and resort to punitive methods of classroom management.

Teachers' perceived efficacy [teacher self-efficacy] rests on much more than the ability to transmit subject matter. Their effectiveness is also partly determined by their efficacy in maintaining an orderly classroom conducive to learning, enlisting resources and parental involvement in children's academic activities, and counteracting social influences that subvert student's commitments to academic pursuits (Bandura, p. 243, 1997).

Additionally, Friedman and Kass (2002) stated, "Teacher's effectiveness is, in part, determined also by their efficacy beliefs [teacher self-efficacy] in maintaining classroom discipline that establishes an environment of learning, in using resources, and in supporting parental efforts to help their children learn" (p. 676).

The physiological and emotional states of a teacher are influenced through interactions with students, whether positive or negative. "The level of arousal, either of anxiety or excitement, adds to the feeling of mastery or incompetence" (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998, p.8). The physiological state is often characterized through stress reactions, again either positive or negative. Research suggests self-efficacy in classroom management may be related to the health and well-being of

teachers. Brouwers and Tomic (2000) reported perceived low levels of teacher self-efficacy in classroom management had a detrimental effect on emotional well being, added to emotional exhaustion and contributed to teacher burnout.

Vicarious experiences are derived from participant observation and reflection on the behavior and actions of role models (Bandura, 1994). When a student teacher observes a positive role model performing at an achievable level, their sense of self-efficacy as a teacher may be enhanced. “The more closely the observer identifies with the model, the stronger will be the impact on efficacy” (Tschnannen-Moran, Woolfolk Hoy, & Hoy, 1998, p.8). Therefore, a student teacher benefits when their cooperating teacher models effective teaching behaviors that approximate a level that the student teacher can adequately perform. Social persuasion is the feedback messages received by an individual. “Social persuasion may entail a ‘pep talk’ or specific performance feedback from a supervisor or a colleague [sic] or it may involve the general chatter in the teachers lounge . . .” (Tschnannen-Moran, Woolfolk Hoy, & Hoy, 1998, p.8). For a student teacher, such messages may come either from students in class the cooperating teacher, or a university supervisor. In general, the student teaching experience is expected to affect the student teacher’s sense of self-efficacy (Woolfolk Hoy & Hoy, 2009), and research indicates that a teacher candidates sense of efficacy drops during their first year of actual teaching, most likely due to the lack of a mentor (i.e. the cooperating teacher) who can provide a constant safety net (Woolfolk Hoy & Burke-Spero, 2005). Therefore, prospective teachers tend to strengthen their personal sense of teacher self-efficacy as a consequence of a successful student teaching experience (Woolfolk, 2007). However, as teacher self-efficacy is both context and subject matter

specific (Tschannen-Moran & Woolfolk Hoy, 2001), the sense of efficacy of a teacher may change from class to class, or from school to school. A single measure is difficult to create that can be utilized in different situations with either preservice teachers or teachers in the classroom.

Raudenbush, Rowan, and Cheong (1992) looked at teacher self-efficacy as being contextually situated; that is, it would vary from class to class, or by ability level of student. The researchers postulated that teachers would have a higher sense of teacher self-efficacy in classes where students had higher academic ability, in classes where they felt better prepared to teach, in classes with younger students or smaller classes, and where students were more engaged. Raudenbush, Rowan, and Cheong (1992) looked at teacher self-efficacy as varying within a teacher, and dependant upon a situation, rather than a fixed belief in their ability. Forty-four percent of the variance in the perceived teacher self-efficacy was intrateacher across the classes taught; that is, the students in those classes affected the sense of teacher self-efficacy. The researchers found the sense of teacher self-efficacy changed according to the track assignment of the classes most often taught. Teachers felt most efficacious in honors classes, and least efficacious in vocational and general-track classes. The researchers warn against a measurement that classifies teachers as either high or low in teacher self-efficacy, as it may change depending on the context. Although differences existed among teachers, substantial intrateacher differences in teacher self-efficacy were found.

Measuring Teacher Self-Efficacy

The measurement of Teacher Self-Efficacy has been an evolutionary process with numerous instruments developed from two main theoretical bases: Social Cognitive theory (Bandura, 1986) and Social Learning theory (Rotter, 1966). Although Bandura's work in self-efficacy has been more popular and well regarded, another theory has driven a small amount of research on self-efficacy; the Social Learning theory developed by Rotter (1966), also referred to as Locus of Control theory. The Locus of Control theory led to the measurement of teachers' perceptions of their own capabilities through a two-item measure by RAND researchers (Tschannen-Moran, & Woolfolk Hoy, 2001). Other instruments followed: the *responsibility for student achievement measure*; the *teacher locus of control*, and the *Webb scale* (Tschannen-Moran & Woolfolk Hoy, 2001). These measurements, although yielding interesting information, were utilized less after the rise in popularity of Bandura's social cognitive theory. One of the earlier instruments that utilized Bandura's theory was the *Ashton vignettes*. The vignettes described situations a teacher might encounter and asked teachers to make judgments about their effectiveness in handling those situations (Ashton & Webb, 1986). However, this measure was not widely accepted and the instrument was only utilized in one study after the original research (Tschannen-Moran & Woolfolk Hoy, 2001).

One of the more accepted and utilized measurement scales was the Gibson and Dembo *Teacher Efficacy Scale* or *TES* (Gibson & Dembo, 1984; Tschannen-Moran, & Woolfolk Hoy, 2001). Gibson and Dembo justify and illustrate the importance of their investigation in teacher self-efficacy by stating, "teacher efficacy [teacher self-efficacy] has been identified as a variable accounting for individual differences in teaching

effectiveness (p. 1). Their research led to an instrument with two distinct factors; *personal teaching efficacy* and *teaching efficacy*. The two factors corresponded with Bandura's two expectancies of social cognitive theory- *self-efficacy* and *outcome expectancy*. The instrument developed by Gibson and Dembo was a springboard for further study in the area of teacher self-efficacy (Tschannen-Moran & Woolfolk Hoy, 2001). However, questions regarding the *outcome expectancy* factor have been raised. The Gibson and Dembo measure, although one of the more utilized scales in the area of teacher self-efficacy, has been subject to criticism relating to the factor structure and factor loadings (Tschannen-Moran & Woolfolk Hoy, 2001).

A variety of other instruments have been developed to measure teacher self-efficacy. A measure specific to science teaching at the elementary school level was developed by Riggs and Enochs (1990) based on Gibson and Dembos original scale. The Riggs and Enochs (1990) instrument found two distinct and separate factors, *personal science teaching efficacy* and *science teaching outcome expectancy* that corresponded to Gibson and Dembo's original factors (Tschannen-Moran & Woolfolk Hoy, 2001).

Emmer and Hickman (1991) suggested the development of a separate measure for self-efficacy in classroom management was appropriate because the domain was distinct from the ability to influence learning or achievement outcomes. Their original study was based on the personal teaching efficacy scale developed by Gibson and Dembo (1984). The Emmer & Hickman instrument had three factors: *Classroom Management & Discipline*, *External Influences*, and *Personal Teaching Efficacy*. Also utilizing the Gibson & Dembo scale, an instrument intended to measure teacher self-efficacy in the

context of special education was developed by rewording the instrument to refer to special education situations (Tschannen-Moran & Woolfolk Hoy, 2001).

Despite all of the subsequent measures on teacher self-efficacy, Bandura's original instrument was not readily used until well after it was developed. Tschannen-Moran and Woolfolk (2001) stated, "in the midst of the confusion about how to best measure teacher efficacy [teacher self-efficacy], an unpublished measure used by Bandura (undated) in his work on teacher efficacy has begun quietly circulating among researchers" (p. 791). Bandura theorized that teacher self-efficacy is not necessarily uniform across tasks; therefore, his instrument had seven subscales. Bandura's measure, entitled *Teacher Self-Efficacy Scale* attempted to paint a wider picture of teacher self-efficacy without being specific to single tasks.

"The conceptual confusion around the concept of teacher efficacy [teacher self-efficacy] has made developing appropriate measures of efficacy difficult" (Tschannen-Moran & Woolfolk Hoy, 2001). In an attempt to solve the problem of measuring teacher self-efficacy, Tschannen-Moran and Woolfolk Hoy developed a new measure of teacher self-efficacy named the *Teachers' Sense of Efficacy Scale (TSES)*. The *TSES* measure was developed by carefully analyzing all previous measures of teacher self-efficacy and the statistical analysis performed on those instruments. The *TSES* was extensively tested in multiple studies with various groups of teachers and pre-service teachers. The researchers, through these studies and the analysis, refined the items from the original 52 items to 32 items and eventually created a 24-item scale. All of the studies employed factor analysis procedures to achieve as parsimonious a scale as possible. The final instrument is in two forms: (1) a long (24 items) form and a (2) short (12 items) form.

Each of the finalized instruments has three distinct factors: *efficacy for instructional strategies*, *efficacy for classroom management*, and *efficacy for student engagement*. The developers of the scale state,

The development of the *TSES* is a step forward in capturing what has been an elusive construct. It is superior to previous measures of teacher efficacy [teacher self-efficacy] in that it has a unified and stable factor structure and assesses a broad range of capabilities that teachers consider important to good teaching, without being so specific as to render it useless for comparisons of teachers across contexts, levels, and subjects The *TSES* is a promising tool for capturing this powerful construct and putting it to constructive use. (Tschannen-Moran & Woolfolk Hoy, 2001, p. 801)

Teacher self-efficacy of secondary agriculture educators has been measured mostly using the *Teacher Sense of Efficacy Scale* (TSES) (Tschannen-Moran & Woolfolk Hoy, 2001). A more specific measure, using a modified Borich needs assessment model, was utilized by Duncan and Ricketts (2006) to describe teacher self in three main areas: technical agriculture content, FFA/leadership development/SAE, teaching and learning, and program management. This instrument is the only measure of teacher self-efficacy that has been adapted to specific job-factors in agricultural education. Bandura (2006) stated that general measures of self-efficacy may have limited value, and that measures specific to required tasks provide a more realistic view of an individual's sense of self-efficacy.

Teacher Self-Efficacy in Agricultural Education

The study of teacher self-efficacy in agricultural education is relatively new compared with research on teacher self-efficacy in education and educational psychology. Rodriguez (1997) appears to be the first to study teacher self-efficacy in the context of agricultural educators. The population for this study was pre-service, first-year, and second-year teachers. The researchers utilized the Gibson and Dembo (1984) *Teacher Efficacy Scale* with two factors (*personal teaching efficacy* and *general teaching efficacy*). The findings of this study indicated that *personal teaching efficacy* was higher than *general teaching efficacy* in pre-service and beginning teachers. Additionally, pre-service teachers had higher overall levels of teacher self-efficacy than beginning teachers, while the second year teachers had the lowest levels of teacher self-efficacy.

The first published study in agricultural education investigated the influence of peer teaching and early field experiences on teacher self-efficacy (Knobloch, 2001). The results of the study revealed early experiences and teaching peers influenced the student sense of teacher self-efficacy. The researchers utilized Woolfolk Hoy and Hoy's (1990) instrument with pre-service students in agricultural education. The instrument had two factors; personal teaching efficacy and general teaching efficacy. Pre-service teachers in this study who had participated in the early field experience and the peer teaching experience significantly increased personal teaching efficacy. The researcher suggested that students became more efficacious about their teaching because they had observed and experienced teaching in a real setting and taught their peers (Knobloch, 2001).

Researchers in a 2002 study found that teacher self-efficacy was related to supportive principal behaviors. The combination of collective efficacy (a group of

teachers' shared belief in their collaborative capabilities to produce student success), student teaching experience, and the quality of a teacher preparation program were associated with teacher self-efficacy (Knobloch & Whittington, 2002).

Knobloch and Whittington (2003b) studied the teacher self-efficacy of student teachers, first-year teachers, second-year teachers, and third-year teachers after the first ten weeks of school. Student teachers were the only group that experienced an increase in teacher self-efficacy in the first 10 weeks of their student teaching experience. The student teacher mean score was 6.92 at the beginning of the school year, and 7.03 at the end of 10 weeks. First-year teachers experienced the greatest decline (from 6.84 to 6.55) in their sense of teacher self-efficacy during their first year of teaching. The decline in teacher self-efficacy of first-year teachers prompted the researcher to recommend induction-year assistance and support to overcome feelings of inadequacy during the critical first year of teaching.

Career commitment is a factor that may affect teacher self-efficacy. Knobloch and Whittington (2003a) investigated the relationship of agricultural education teacher career commitment and their teacher self-efficacy. The teachers in the study were split into two groups based on their score on a four-item career commitment scale. The researchers utilized the *TSES* (Tschannen-Moran & Woolfolk Hoy, 2001) as the dependent measure of teacher self-efficacy in a pre-test, post-test design. The teachers in the study had similar levels of teacher self-efficacy at the beginning of the school year. However, respondents who had higher career commitment were more efficacious after the first 10 weeks of school when compared to the first week of school. Therefore, the researchers suggested career commitment may be a source of teacher self-efficacy, and

teachers with long-term career goals are more intrinsically motivated. The teachers in the low career commitment category experienced a decline in their teacher self-efficacy after the first 10 weeks of school. The researchers recommend the utilization of career commitment as a variable in future studies on teacher self-efficacy.

Wheeler and Knobloch (2006) further studied the influence of career commitment on teacher self-efficacy (using the *TSES*) and attempted to identify other characteristics that may influence teacher self-efficacy. Other characteristics were: career commitment, number of students, contract length, and years of teaching experience. Only one of the findings supported the researcher's hypothesis; the characteristic of career commitment was positively related ($r = .16$) to teacher self-efficacy. Contract length was negatively associated ($r = -.14$) with teacher self-efficacy, as was years of teaching experience ($r = -.27$). The negative correlation between years of teaching experience and teacher self-efficacy contradicted previous research. The results of this study suggested this area of inquiry would benefit from further study and is essential to address how teacher-efficacy changes based on teaching experience.

Roberts, Harlin, & Ricketts (2006) utilized the *TSES* instrument to assess teacher self-efficacy of student teachers in agricultural education at different points of the student teaching experience. The researchers measured teacher self-efficacy at four different points in a 15-week student teaching experience; consisting of a four week on-campus experience, and an 11- week field experience. The researchers found the student teachers' overall teaching self-efficacy score varied across the experience. The mean at the beginning of the four week on-campus experience was 7.21 (*Quite a Bit*), then rose slightly ($m = 7.41$) at the end of the fourth week. The students' scores dropped to their

lowest during the middle of the 11 week experience ($m = 6.91$), then increased at the end of the experience ($m = 7.39$).

The researchers also looked at each of the three factors (*efficacy for student engagement*, *efficacy for instructional strategies*, and *efficacy for classroom management*) as identified by Tschannen-Moran and Woolfolk Hoy (2001). On the *student engagement* factor, the scores mirrored the overall score, with a mean of 7.06 (*Quite a Bit*) at the beginning of the four week experience, a drop in the middle of the 11 week experience, and were highest ($m=7.24$) at the end of the experience. The factor *instructional strategies* also had the same pattern, with an initial mean of 7.21, and a final mean of 7.52. The changes between data collection point were less in the *classroom management* factor, but still followed the same pattern, with an initial mean of 7.37 (*Quite a Bit*), a low during the middle of the 11 week experience, and a final mean of 7.40 (Roberts et al., 2006).

The results for the *student engagement* and *instructional strategies* yielded significant results between the data collection points, while there was no significant difference in the *classroom management* scores. The study revealed student teachers were the most efficacious in the factor of *instructional strategies*. The researchers observed that “. . . limited knowledge exists about teaching efficacy of preservice agricultural science teachers, largely due to the paucity of research in this area. Existing research has largely been conducted by just a few researchers, in only a few states” (p. 84). The researchers expressed surprise at the small change in the *classroom management* factor, as previous research had indicated that classroom management was often a source of concern for preservice teachers. In light of their findings, and the

limited amount of research on agricultural science teachers and preservice teachers, the researchers recommend additional longitudinal studies. The researchers also recommended that future studies also measure the causes of changes in levels of teacher self-efficacy, and examine how teacher self-efficacy relates to novice teachers' decisions to remain in the profession (Roberts et al., 2006).

Utilizing the *TSES*, Whittington, McConnell, and Knobloch (2006) sought to describe the teacher self-efficacy of first-year, second-year, and third-year year agricultural education teachers; and determine differences based on stage of development, gender and teacher activities. The study was a one-shot case study design, with the instrument administered at the end of the school year. No differences in teacher self-efficacy were found based on the participants' year of teaching. In the multiple regression analysis, forty-two teacher characteristics were examined, six of which were significant. However, only two of the variables; teacher's agreement with the statement that their student teaching experience was excellent and the number of class preparations for which the teacher is responsible, had a significant relationship with teacher self-efficacy. The two variables explained more than 33% of the variance in teacher self-efficacy.

Knobloch (2006) studied the levels of teacher self-efficacy of student teachers at two different institutions. The two groups of teachers were similarly efficacious; however, they differed on their perceptions of environmental factors that may contribute to teacher self-efficacy. The three environmental factors were: supportive principal behaviors, cooperating teacher competence, and number of class preparations. The student teachers in this study reported fairly high levels of teaching self-efficacy.

Knobloch speculated that student teachers may have an inflated sense of teacher self-efficacy, and it remains inflated through the student teaching experience as a result of the support from the cooperating teacher.

Rocca and Washburn (2006) investigated the differences in teacher self-efficacy between traditionally and alternatively certified teachers using the short form of the *TSES* (Tschannen-Moran & Woolfolk Hoy, 2001). The alternatively certified teachers were about 10 years older than the traditionally certified teachers. The two groups did not differ in their perceived teacher self-efficacy; however, the researchers did not conduct a factor analysis of the data, nor did they utilize the three factors identified by Tschannen-Moran and Woolfolk Hoy (2001). The researchers also sought to determine the relationship between years of agricultural teaching experience and teacher self-efficacy of traditional and alternatively certified teachers. The results showed a slightly higher relationship ($r = .22$) for traditionally certified teachers than for alternatively certified teachers ($r = .11$). Rocca and Washburn (2006) questioned why the two groups were similar in their level of teacher self-efficacy, as the alternatively certified teachers had no formal training in education. The researchers recommended further studies with alternatively certified agricultural educators to determine what causes their level of teacher self-efficacy to be equal to a traditionally certified teacher. However, they did not raise the question of the age difference of the two groups, nor did they attribute any of the results to the older age of the alternatively certified teachers.

Duncan and Ricketts (2006) postulated that the research in agricultural education was limited to general pedagogical topics; therefore, a more specific measure was needed to accurately describe the teacher self-efficacy of secondary agricultural educators. The

researchers utilized a modified Borich needs assessment model using the following variables: technical agriculture content, FFA/leadership development/SAE, teaching and learning, and program management. In addition to describing teacher self-efficacy in these areas, the researchers also attempted to differentiate between traditionally and alternatively certified teachers. The results indicated that the traditionally certified teachers felt *somewhat competent* ($m = 3.38$) in the technical content construct, and *competent* in FFA/leadership development/SAE ($m = 3.70$), teaching and learning ($m = 3.78$), and program management ($m = 3.83$). Alternatively certified teachers were less efficacious in all areas.

Wolf, Foster, and Birkenholz (2007) utilized the classroom management scale developed by Emmer and Hickman (1991) with pre-service teachers. The researchers used leadership development experiences in a multiple regression model to explain the variance in teacher self-efficacy in classroom management. The instrument was administered to student teachers following their student teaching experience. The researchers found that the student teachers were the most efficacious in the *classroom management and discipline factor* ($m = 4.70$), slightly less ($m = 4.44$) efficacious in the *personal teaching efficacy factor*, and least ($m = 3.55$) efficacious in the *external influences factor*. The multiple regression analysis revealed only one variable; leadership in the Boy/Girl Scouts, explained any of the variance; 16.7% of the variance in the *classroom management and discipline factor*. However, only 15% of the respondents indicated involvement in leadership roles in this organization. The results of this study indicated teacher self-efficacy is not dependant on leadership experiences occurring prior

to entrance into a teacher preparation program, and that other factors contribute to, and affect teacher self-efficacy during student teaching.

Using Tschannen-Moran and Woolfolk Hoy's (2001) *Teachers sense of efficacy scale*, Harlin, Roberts, Briers, Mowen and Edgar (2007) found that student teachers at four different institutions experienced the same changes in teacher self-efficacy over the course of their student teaching internship. The pre-service teachers reported the lowest levels of teacher self-efficacy at the middle of the 11-week student teaching experience. This finding prompted the researchers to recommend interventions during the middle of student teaching experiences to help increase teacher candidates teacher self-efficacy.

Wolf, Foster, and Birkenholz (2008) assessed teacher candidate's level of teacher self-efficacy and their perceptions of their preparation utilizing the *Teachers sense of efficacy scale* (Tschannen-Moran & Woolfolk Hoy, 2001), and a modified Borich (1980) needs assessment model. Additionally, the researchers investigated the relationship between teacher self-efficacy and professional experiences during the student teaching internships. The researchers found that observing young or beginning teachers, a vicarious experience (Bandura, 1994), was positively related to their sense of efficacy. The amount of feedback candidates received from their cooperating teacher was also positively related to teacher self-efficacy. The researchers concluded that this feedback enabled teacher candidates to refine and improve their instructional strategies.

The number of class preparations at any one time, and the number of total class preparation over the course of the semester were negatively related to teacher self-efficacy. This prompted the researchers to recommend that the number of classes that candidates are engaged in teaching should be examined. Bandura (1986) recommended

that self-efficacy is built when an individual is successful at a task. It is possible that teacher candidates in this study were overloaded, and were not able to experience success in teaching each course before additional courses were added; indicating a “point of diminishing returns” (Wolf, Foster & Birkenholz, p. 26, 2008) when candidates are involved in teaching too many courses.

Edgar, Roberts, and Murphy (2008) found that teacher candidates in agricultural education that had a structured communication environment declined in their teacher self-efficacy, as measured by the *TSES* (Tschannen-Moran & Woolfolk Hoy, 2001). The structured communication called for the cooperating teacher to rate the student teacher weekly based on their observation of prescribed practices. The researchers concluded that the candidates “. . . more discriminately judged their abilities through involvement in the treatment [structured communication] as opposed to those who did not consistently communicate with a cooperating teacher about many aspects of the field experience” (p. 11). This conclusion led to the researchers to recommend that the impact and type of communication between the cooperating teacher and the teacher candidates be closely monitored. The use of structured communication, while negatively affecting the candidates teacher self-efficacy may have led the student teachers to be more “. . . grounded in their perception of their beliefs about teaching” (p. 11).

Demographic Characteristics related to Teacher Self-Efficacy

Teacher self-efficacy has been described as a context-specific construct, varying from situation to situation. However, Bandura (1986) has established that efficacy develops based on past experiences. Mastery experiences can be past experiences with a

particular task, or experiences related to the task, for example, participation in a youth organization. Characteristics related to teachers past experiences were assessed in this study as those characteristics are mastery and vicarious experiences.

Level of education is a characteristic that may affect teacher self-efficacy. Teachers with a graduate degree have been found to have higher levels of teacher self-efficacy than teachers with baccalaureate education (Hoover-Dempsey, Bassler, & Brissie, 1987). Gender is also a characteristic that may affect teacher self-efficacy. Ross, Cousins and Gadalla (1996) found that female teachers with graduate degrees were more likely to have higher teacher self-efficacy. However, Darling-Hammond, Chung, and Frelow (2002), found that teacher self-efficacy was not related to age or gender, but was influenced by teaching experience. Roberts, Mowen, Edgar, Harlin, and Briers (2007) found a negligible relationship between teacher self-efficacy and personality type, supporting Bandura's (1994) assertion that efficacy is a result of experiences rather than based on personality type.

Teacher perceptions of preparation and importance

Teacher preparation is an important factor in teacher self-efficacy. Knobloch and Whittington (2002) found that teacher preparation quality was associated with student teacher sense of teacher self-efficacy. Ross, Cousins, and Gadalla (1996) found that "feelings of being well-prepared" was associated with their sense of teacher self-efficacy. Additionally, Rubecks and Enochs (1991) found teacher self-efficacy was predicted by university coursework related to future teaching requirement. Darling-Hammond, Chung, and Frelow (2002) examined the relationship between perceptions of preparation

and teacher self-efficacy and found that ratings of their overall teacher preparedness were significantly related to their sense of efficacy about whether they are able to make a difference in student learning. Teachers in this study who, “. . . felt underprepared were significantly more likely to feel uncertain about how to teach some of their students and more likely to believe that student’s peers and home environments influence learning more than teachers do” (p. 294). Knobloch (2006) found a relationship between student teacher perceptions of their teacher preparation program and their teacher self-efficacy; students who had more positive perceptions of their teacher preparation program were more efficacious at the conclusion of their student teaching experience. Whittington, McConnell, and Knobloch (2006) found that students perceptions of their student teaching experience was positively related ($r = .39$) to their sense of teacher self-efficacy.

Teacher Retention and Teacher Self-Efficacy

Teachers in Darling-Hammond, Chung, and Frelow’s (2002) study with lower teacher self-efficacy were significantly less likely to say they would choose to become a teacher if they had to do it over again, and were less likely to say that they plan to remain in teaching. Additionally, Raudenbush, Rowen & Cheong (1992) found that teachers’ sense of efficacy was related to their perceptions of how well they were prepared to teach. Whittington, McConnell, and Knobloch (2006) found a negative relationship ($r = -.27$) between teacher self-efficacy and teachers who did not plan to teach the following year. Conversely, teachers who planned to teach for at least five years had moderately positive relationship ($r = .44$) with teacher self-efficacy.

Model of Teacher's Perceived Efficacy

Woolfolk Hoy and Hoy stated that “One of the things that makes teacher efficacy [teacher self-efficacy] so powerful is its cyclical nature” (p. 168, 2009). The present study addressed three specific components (Figure 4), of the model presented (Figure 3) by Woolfolk Hoy and Hoy (2009), by assessing teachers preparation (analysis of the teaching task), their assessment of their teaching competence (their sense of efficacy), their perceptions of the importance of factors (analysis of the teaching task), and their intentions to remain in the profession (persistence and resilience – a consequence of teacher sense of efficacy).

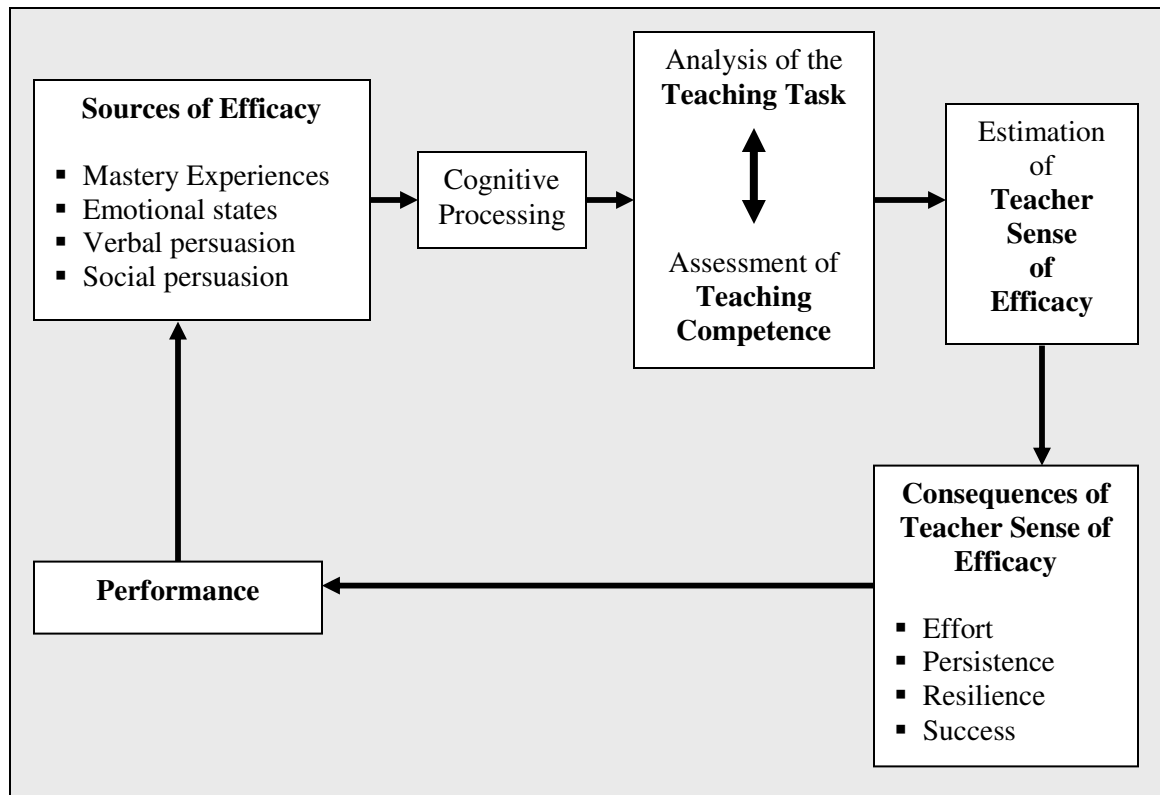


Figure 3: A Model of Teacher's Perceived Efficacy. (Woolfolk Hoy and Hoy 2009)

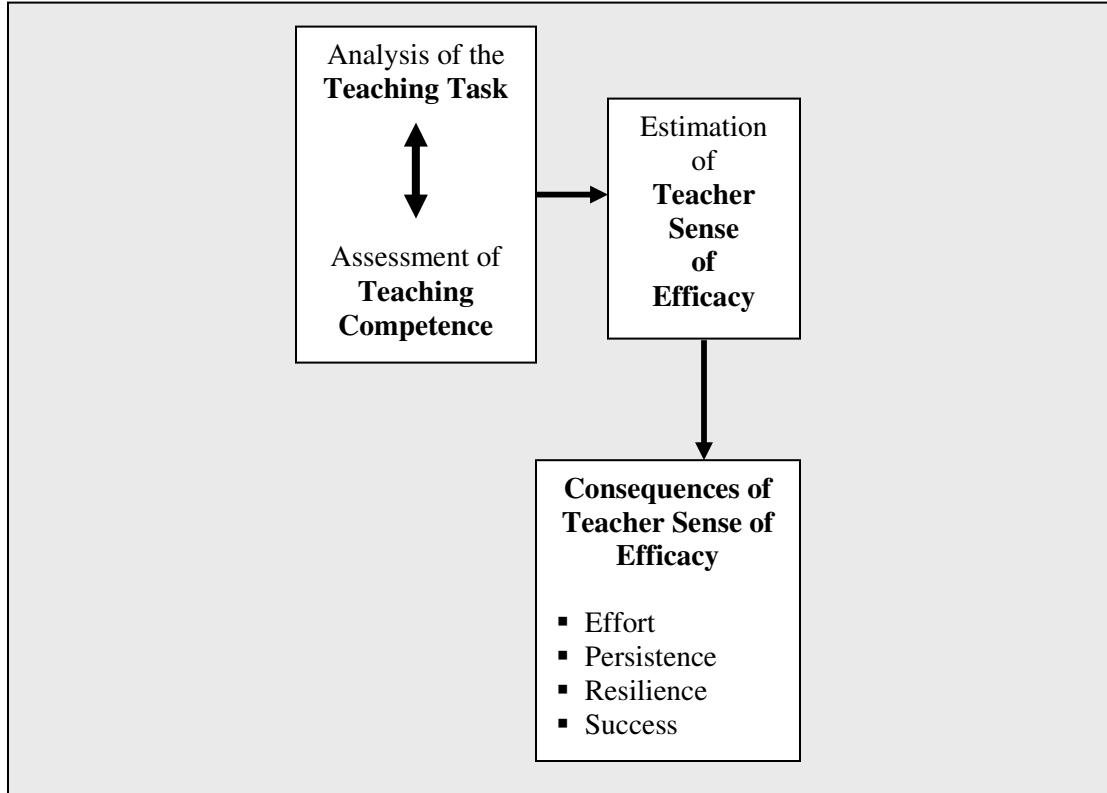


Figure 4: Areas of Woolfolk Hoy and Hoy (2009) model addressed in this study.

CHAPTER 3

METHODS

"They are able who think they are able."

~ Virgil ~

This chapter includes information related to the research design of this study, including the type of research used to accomplish the research objectives, how the research subjects were selected, and the outcome measure used. The data collection procedures and the data analysis procedures are also presented.

Type of Research

The study was a descriptive survey with a relational component. The study was a census; therefore, the results were not generalized beyond the actual population. Nevertheless, the four threats to external validity in survey research were addressed. The external validity threats in survey research are: sampling error, frame error, selection error, and non-response error. Frame and selection error were controlled by utilizing a current and unduplicated list of teachers provided by the Ohio Department of Education (ODE, 2008b). The list was cross-referenced with the student teacher placements from The Ohio State University Department of Human and Community Resource

Development. Sampling error is not a concern, as this study was a census. Non-response error is an issue when subjects cannot be located or fail or refuse to respond. Non-response error was controlled by comparing on-time respondents to late respondents (Miller & Smith, 1983), using a t-test for independent samples on the three summated constructs, and by the use of Dillman's (2000) tailored design method. Measurement error was controlled by the utilization of a reliable and valid instrument. The relational component of this study involved the description of the relationships between the measured domains, teacher demographics, and the intention of teachers to remain in the profession of agricultural education.

Population and Subject Selection

The population for this census study (N=47) was Agricultural Education teachers in the state of Ohio who had been teaching four years or less, and were licensed through the teacher preparation program in agricultural education at The Ohio State University. The teachers had all been licensed through the redesigned teacher education program (Cano, Whittington, Connors, & Knobloch, 2002). Restricting the population to these parameters ensured homogeneity of the population and ensured that all participants had similar teacher preparation experiences. A current frame of the population was obtained from the Ohio Department of Education (ODE, 2008b). The list was checked for duplication, and was cross-referenced with the student teacher placement records from 2003 to 2007.

Outcome Measure

Data were collected using an instrument developed by the researcher. Items specific to agricultural education were incorporated in the instrument from a variety of sources (Duncan & Ricketts, 2006; Duncan, Ricketts, Peake, & Uessler, 2005; Garton & Chung, 1996; Joerger, 2002; Myers, Dyer, & Washburn, 2005; Roberts & Dyer, 2004). The instrument also contained items in the Instructional Strategies construct from the Ohio State Teacher Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001). A measure of general teaching efficacy would not capture all of the job-specific tasks that are required of an agricultural educator. “The ‘*one measure fits all*’ approach to measuring self-efficacy usually has limited explanatory and predictive value because most of the items in an all-purpose test may have little or no relevance to the domain of functioning” (Bandura, 2006, p.307). Therefore, the instrument for this study was created to examine domains of functioning specific to agricultural educators. Instrument items were phrased in terms of *can do* rather than *will do*. The determination of current operative capabilities, rather than potential capabilities is key to a measurement of self-efficacy (Bandura, 2006).

Scaling of the instrument was adapted from the *Teachers Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001), using a nine-point summated rating scale. Teachers responded to items that asked what their level of capability was on each item from 1= No Capability to 9= A Great Deal of Capability.

An adaptation of the Borich (1980) needs assessment model was utilized. In addition to participants’ perceived self-efficacy in certain tasks, they were also asked to rate the level of importance of the tasks in their current teaching position. Importance of

the items was measured using a nine-point summated rating scale which asked participants to rate each item from 1= Not Important to 9= Very Important. The total scale will allow for a determination of discrepancy scores between teacher self-efficacy and importance.

Instrument Validity and Reliability

The validity and reliability of the instrument were assessed to ensure the quality of the research (DeVellis, 2003). A panel of experts in agricultural education determined the content validity of the instrument (Appendix A). Content validity concerns the extent to which a specific set of items reflects a content domain (Devellis, 2003).

Reliability of the instruments was assessed through a pilot test (N=13) and a post-hoc test (N=39) using the Cronbach's alpha internal consistency reliability coefficient. The subjects for the pilot test consisted of the available subjects from the 2007 student teaching cohort. The pilot test was administered during the capstone course in the winter quarter, 2008. Cronbach's alpha is concerned with the homogeneity of the items within a scale (DeVellis, 2003). Bandura (2006) recommended the use of Cronbach's alpha to assess the internal consistency of self-efficacy instruments.

The reliabilities of the domains from the pilot and post-hoc tests are presented in Table 1 and are acceptable. Nunnally and Bernstein (1994) stated: "in the early stages of predictive or construct validation research, time and energy can be saved using instruments that have only modest reliability, e.g., .70 . . . it can be argued that increasing reliabilities much beyond .80 in basic research is often wasteful of time and money" (p. 264).

	<u>Classroom domain</u>		<u>FFA domain</u>		<u>SAE domain</u>	
	Pilot Test	Post-Hoc Test	Pilot Test	Post-Hoc Test	Pilot Test	Post-Hoc Test
Teacher self-efficacy	.97	.94	.98	.94	.98	.96
Perceived importance	.85	.94	.92	.96	.96	.94

Table 1: Reliabilities (Cronbach's alpha)

Data Collection Procedures

Data were collected using Dillman's (2000) tailored design method. Dillman's method consists of five elements: a respondent-friendly questionnaire, up to five contacts with the recipient, inclusion of stamped return envelope, personalized correspondence, and a token of appreciation or incentive that is sent with the survey instrument. Approval from the Institutional Review board was sought; the research protocol was approved on April 17, 2008 (protocol number 2008E0250). The data were collected using the internet survey provider SurveyMonkey®, and mailed questionnaires. Although response rates with an internet-only data collection protocol may be lower, the reliability of the responses is identical for both mailed and internet delivered questionnaires (Frazee, Hardin, Brashears, Haygood, & Smith, 2003).

The data were collected in the spring of 2008. The teachers were sent a personalized pre-notification email (Appendix B) informing them that they would receive the instrument within a few days utilizing the secure internet survey provider SurveyMonkey®, and offering them the option to receive a hard copy of the instrument

by mail (first contact). A few days later, teachers received the instrument utilizing the internet survey provider SurveyMonkey®, consisting of cover letter (Appendix C), the instrument (Appendix D), and notification that they would receive a \$5 gift card as a token of appreciation (second contact).

Approximately 10 days later, participants who had not responded via email were sent the first reminder (third contact) notification from SurveyMonkey® (Appendix E), with a reminder of the \$5 gift card incentive. Ten days later (approximately 20 days after the initial contact) participants who had not responded were sent the second reminder (fourth contact) notification from SurveyMonkey® (Appendix F), with a reminder of the \$5 gift card incentive. Approximately 10 days later, the participants who had not responded via email were mailed a hard copy of the instrument (fifth contact, with the \$5 gift card incentive. Approximately 10 days later, the participants who had not responded via email or hard copy were contacted by telephone (Appendix G) to determine if they had received the questionnaire (sixth contact), a replacement instrument, and cover letter was sent to the non-respondents.

On-time respondents were considered those participants who had responded to the first two contacts with the questionnaire (either by internet or mail). These respondents were compared to late respondents (Miller & Smith, 1983) on the *teacher self-efficacy classroom domain*, the *teacher self-efficacy FFA domain*, the *teacher self-efficacy SAE domain*, the *perceived importance classroom domain*, the *perceived importance FFA domain*, and the *perceived importance SAE domain* using an independent t-test.

Data Analysis

The data were analyzed using the Statistical Package for the Social Science Personal Computer version (SPSS v. 14). Domains were summated to analyze the data. Cases where individual domains (classroom, FFA, SAE) had more than 10 percent missing items were excluded from the data set. In cases with less than 10 percent missing in individual domains (classroom, FFA, SAE), mean replacement was used. George and Mallery (2006) suggested “. . . it is acceptable to replace up to 15 percent of data by the mean of the distribution (or equivalent procedures) with little damage to the resulting outcomes” (p. 48). Best and Kahn (2006) recommend to either insert a score that might be predicted for the individual based on other data from that individual, or insert the sample mean for the missing data.

Descriptive parameters were used to answer research question one: describe the demographic characteristics of beginning agricultural education teachers, research question two: describe the perceived teacher self-efficacy of beginning agricultural education teachers, and research question three: describe beginning agricultural education teachers perceived level of importance of job-related factors.

Discrepancy scores were calculated between the teacher self-efficacy domains, and the perceived importance domains to answer research question four. Correlation coefficients (ρ) were used to answer research question five and determine the relationship between the demographic characteristics and the teacher self-efficacy domains. Logistic regression was used to answer research question six and assess the relationships between the participant's intention to remain in the profession, demographic characteristics, and the teacher self-efficacy domains.

CHAPTER 4

FINDINGS

"A man who doubts himself is like a man who would enlist in the ranks of his enemies and bear arms against himself. He makes his failure certain by himself being the first person to be convinced of it."

~ Alexandre Dumas ~

Data Collection

Data were collected using a valid and reliable instrument created by the researcher. The development of a valid and reliable instrument to measure teacher self-efficacy in agricultural education will allow a more comprehensive analysis of agricultural educators teacher self-efficacy, as well as incorporate domains of functioning that are essential and specific to agriculture education (Phipps, Osborne, Dyer & Ball, 2008). The development of specific measure addressed concerns from Bandura (2006) regarding the use of general measures of self-efficacy. Incorporation of the Borich (1980) needs assessment model allowed for the identification of discrepancies between teacher self-efficacy and importance in the domains essential for an agricultural educator. The development of this instrument, as a measure of agricultural educator teacher self-

efficacy, or as a needs assessment model will allow for future research on agricultural education teacher self-efficacy.

The 2007-2008 list of new teachers was obtained from the Ohio Department of Education (ODE, 2008b); 119 secondary agricultural educators who had been teaching four years or less were identified out of 537 teachers. The student teacher placements from the Department of Human and Community Resource Development from 2003-2007 (N=154) were cross referenced with the Ohio Department of Education list. The final frame was restricted to those teachers who were licensed following completion of the teacher preparation program in agricultural education at The Ohio State University (N=47). Therefore, the results and conclusions of this study are limited to the 47 teachers identified in spring, 2008.

When developing the frame, the researcher discovered that 130 teacher candidates completed their student teaching internship between Autumn quarter 2003 and Autumn quarter 2006. Forty-six (35 %) of the teachers who completed the teacher preparation program from 2003-2006 were teaching secondary agriculture education in the state of Ohio in the spring, 2008.

On April 15, 2008, the 47 teachers were sent a personalized pre-notification email (Appendix B) informing them that they would receive the instrument in a few days, utilizing the secure internet survey provider SurveyMonkey®, and offering them the option to receive a paper of the instrument by mail. On April 17, 2008, teachers received the electronic mailing; consisting of cover letter (Appendix C), the instrument (Appendix D), and notification that they would receive a \$5 gift card as a token of appreciation. One participant requested a paper copy and was mailed a packet on April 18, 2008, that

included the cover letter, the instrument, a pre-addressed, stamped envelope, and a \$5 gift card as a token of appreciation. A total (1 mail & 23 internet) of 24 responses (51%) were received before April 24, 2008.

On April 24, 2008, the 23 participants who had not responded via email were sent the first reminder notification from SurveyMonkey® (Appendix E). A total (1 mail and 31 internet) of 32 responses (68%) were received before May 12, 2008. On May 12, 2008, the participants who had not responded were sent a second reminder notification from SurveyMonkey® (Appendix F). On May 16, 2008, the participants who had not responded via email were mailed a hard-copy of the instrument, with the \$5 gift card incentive. A total of 36 responses (76%) were received on or before May 27, 2008. On May 28, 2008, the participants who had not responded via email or hard-copy were contacted by telephone (Appendix G) to determine if they had received the questionnaire. One participant indicated that they would complete the questionnaire immediately. One respondent requested an additional copy, which was mailed on May 29, 2008.

The on-time respondents were those who responded before May 12, 2008 (N=32). The total number of late-respondents was 15. Of the 15 late-respondents, data were obtained from seven, resulting in a total response rate of 83% (N=39). The late respondents were compared to the on-time respondents (Miller & Smith, 1983) on the *teacher self-efficacy classroom domain*, the *teacher self-efficacy FFA domain*, the *teacher self-efficacy SAE domain*, the *perceived importance classroom domain*, the *perceived importance FFA domain*, and the *perceived importance SAE domain* using an independent samples t-test ($\alpha = 0.05$). No difference was found between the two groups

in any of the domains; therefore, the data were combined. Data collection was concluded on June 1, 2008.

Results for Objective 1: Describe the demographic characteristics of beginning agricultural educators.

The teachers in this study completed their student teaching internship between 2003 and 2007 and were licensed to teach following completion of the Agricultural Education Teacher Preparation Program at The Ohio State University. The age of the teachers ranged from 22 to 36, with the majority of the teachers between 24 and 26. All individuals who completed the questionnaire had less than four years of teaching experience. Nine (23%) were in their first year of teaching, 12 (31%) were in their second year of teaching, 14 (36%) were in their third year of teaching, and four (10%) were in their fourth year of teaching. Twenty of the respondents were female (51%), and 19 (49%) were male. Most of the teachers (87%) were enrolled in agricultural education in high school, and the same number were FFA members. The majority of the teachers had a B.S. degree (82%), while 18 percent had an M.S. degree. Thirty-eight of the teachers indicated that they planned to teach agricultural education next year, while only one indicated they would not return to teaching.

Teachers were asked questions related to their perceptions of experiences during their student teaching internship and their teaching career (Table 2). Teachers were asked to rate the competence and support of their mentor teacher, as well as the support of their principal and superintendent.

Item	1	2	3	4	5	6	N.A.
My teaching mentor is a competent teacher	1/3	2/5	1/3	2/5	10/26	19/49	4/10
My mentor is supportive	1/3	0	3/8	2/5	12/31	17/44	4/10
My first year of teaching has been/was an excellent experience	2/5	2/5	2/5	5/13	16/41	10/26	2/5
My school principal is supportive of my program	3/8	0	3/8	2/5	8/21	22/56	1/3
My district superintendent is supportive of my program	1/3	2/5	2/5	2/5	12/31	20/52	0
My student teaching experience was excellent	0	1/3	1/3	6/15	8/21	23/59	0

Table 2: *Teachers level of agreement related to teaching experiences: f/P. (N=39)*

Note. *f*= frequency, *P*=percentage. 1 = Strongly Disagree, 2 = Disagree, 3 = Slightly Disagree, 4 = Slightly Agree, 5 = Agree, 6 = Strongly Agree, N.A. = Not Applicable.

Most of the teachers agreed or strongly agreed that their teaching mentor was a competent teacher and was supportive. Most teachers agreed that their first year of teaching was an excellent experience, although six of the teachers disagreed with this statement. Most teachers agreed that their school principal and their district superintendent were supportive of their programs. Six participants disagreed with the statement that their principal is supportive, and five disagreed with the statement that their district superintendent is supportive. The majority of teachers (94%) agreed with the statement that their student teaching experience was excellent, and 60 percent of these strongly agreed with the statement.

In conclusion, the average beginning teacher was between 24 and 26 years of age and planned to continue teaching agricultural education. Most teachers were enrolled in

agricultural education in high school, and were FFA members. Teachers agreed that their student teaching experience and their first year of teaching were both excellent.

Results for Objective 2: Describe the perceived teacher self-efficacy of beginning agricultural education teachers

Teacher self-efficacy in agricultural education was assessed using a researcher-created instrument with three domains: Classroom, FFA, and SAE (Tables 3-5).

Teachers in this study indicated that they had high capability on most items. The summated mean for Teacher Self-Efficacy in Agricultural Education was 7.05 (Table 9).

Perceived teacher self-efficacy in the classroom domain

In the Classroom domain (Table 3), teachers indicated they had high capability on most items. Complete data are presented in Appendix H. The summated mean for the classroom domain was 7.15 (Table 9). Teachers reported the highest levels of teacher self-efficacy in the classroom domain when compared to the FFA and the SAE domains.

Over 80 percent of the teachers reported high levels of capability on three items: using a variety of teaching techniques, providing alternative explanations when students are confused, and responding to difficult questions from students.

However, most teachers reported moderate or low levels of capability for two items: managing a horticulture laboratory/greenhouse (low = 15 %), and adjusting lessons to proper levels for individual students (low = 10 %). Thirty-eight percent of beginning teachers indicated they perceived themselves as having high capability in managing a

horticulture laboratory or greenhouse. Four items in the classroom construct received ratings in the low category by one or more of the respondents: effectively conducting field trips, teaching students with special needs, and managing agricultural mechanics laboratories and managing horticulture facilities laboratories.

What is your level of capability to:	Low	Moderate	High
Use a variety of teaching techniques	0	6/15	33/85
Provide alternative explanations when students are confused	0	7/18	32/82
Respond to difficult questions from my students	0	7/18	32/82
Utilize computers in my teaching	0	8/21	31/79
Implement a curriculum in agriculture	0	8/21	31/79
Evaluate student learning	0	8/21	31/79
Motivate students to learn	0	8/21	31/79
Utilize multimedia in my teaching	0	8/21	30/77
Create lesson plans for instruction	0	8/21	30/77
Use a variety of assessment strategies	0	8/21	30/77
Craft good questions for my students	0	9/23	30/77
Effectively conduct field trips	1/3	8/21	30/77
Implement alternative strategies in my classroom	0	11/28	28/72
Teach students to think critically	0	11/28	28/72
Manage student behavior	0	12/31	27/69
Teach students with special needs	2/5	13/33	26/66
Provide appropriate challenges for very capable students	0	16/41	23/59
Manage an agricultural mechanics laboratory	4/10	14/36	21/54
Adjust my lessons to the proper level for individual students	0	20/51	19/49
Manage a horticulture laboratory/greenhouse	6/15	18/46	15/38

Table 3: *Teacher Self-Efficacy in Classroom Domain: f/P (N=39)*

Note: *f*= frequency, *P*=percentage. Low = 1-3, Moderate = 4-6, High = 7-9. 1= No Capability, 3= Very Little Capability, 5= Some Capability, 7= Quite a Bit of Capability, 9= A Great Deal of Capability

Perceived teacher self-efficacy in the FFA domain

In the FFA domain (Table 4), teachers indicated they had high capability on most items. Complete data are presented in Appendix H. The summated mean for the FFA domain was 7.04 (Table 9); this domain had lower teacher self-efficacy scores than the classroom domain and higher teacher self-efficacy scores than the SAE domain. Over 80 percent reported high capability on three items: assisting students in planning FFA banquets, assisting students in facilitating FFA fundraising activities, and supervising students during FFA trips and activities.

The majority of teachers reported moderate or low capability on four items: assisting students in preparing FFA degree applications, assisting students in preparing FFA proficiency applications, utilizing a program advisory board and utilizing the FFA alumni. Eighteen percent of teachers reported low capability in assisting students in preparing FFA proficiency applications, thirteen percent indicated low capability in utilizing a program advisory board, and 10 percent reported low capability in utilizing the FFA alumni.

What is your level of capability to:	Low	Moderate	High
Assist students planning FFA banquets	0	5/13	34/87
Assist students in facilitating FFA fundraising activities	0	6/15	33/85
Supervise students during FFA trips and activities	0	6/15	33/85
Advise FFA Meetings	0	8/21	31/79
Assist students in planning FFA chapter activities	0	9/23	30/77
Assist students in developing community service projects	0	9/23	30/77
Recruit new FFA members	0	9/23	30/77
Coach leadership based (Eg. Speaking, Parliamentary Procedure etc.) CDE teams	1/3	9/23	29/74
Train a chapter officer team	0	11/28	28/72
Assist students in recruiting new FFA members	0	10/26	28/72
Assist students in developing an effective public relations program for the FFA chapter	0	10/27	28/72
Assist students in preparing a Program of Activities	4/10	10/27	25/64
Coach skills based (Eg. Evaluation, Ag. Mechanics, etc.) CDE teams	1/3	15/39	23/59
Assist students in preparing FFA degree applications	3/8	18/46	18/46
Assist students in preparing FFA proficiency applications	7/18	14/36	18/46
Utilize a Program Advisory Board	5/13	16/41	15/38
Utilize the FFA Alumni	4/10	20/51	13/33

Table 4: *Teacher Self-Efficacy in FFA Domain: f/P (N=39)*

Note: f= frequency, P=percentage. Low = 1-3, Moderate = 4-6, High = 7-9. 1= No Capability, 3= Very Little Capability, 5= Some Capability, 7= Quite a Bit of Capability, 9= A Great Deal of Capability

Perceived teacher self-efficacy in the SAE domain

In the SAE domain (Table 5), teachers indicated they had high capability on most items. Complete data are presented in Appendix H. The summated mean for the SAE domain was 6.96; this domain was the lowest when compared with the Classroom domain ($\mu = 7.15$) and the FFA domain ($\mu = 7.04$) (Table 9).

Teachers reported 80 percent agreement on one item in the SAE domain: assisting student in receiving recognition for SAE projects. Three items had over 70 percent agreement in the high efficacy category: providing career exploration opportunities for students, conducting home and SAE visits, and supervising student placement SAE programs.

Only three items did not have any responses in the low category. The majority of the items had less than 70 percent of responses in the high category. Two items had less than 60 percent of the responses in the high category: developing SAE opportunities for students, and utilizing the community to develop SAE opportunities for students. Ten percent of the respondents indicated they had low capability in utilizing the community to develop SAE opportunities for students.

What is your level of capability to:	Low	Moderate	High
Assist students in receiving recognition for SAE projects	1/3	5/13	33/85
Provide career exploration opportunities for students	0	10/26	29/74
Conduct home/SAE visits	2/5	8/21	29/74
Supervise student placement SAE programs	1/3	10/26	28/72
Show students the value of SAE programs	1/3	11/28	27/69
Assist students in keeping SAE records	2/5	10/26	27/69
Supervise student entrepreneurship SAE programs	1/3	11/28	27/69
Make recommendations for students' SAE projects	0	13/33	26/66
Supervise student production SAE programs	1/3	12/31	25/64
Utilize resources to make recommendations to students' SAE projects	0	15/38	24/62
Motivate students to have an SAE program	2/5	13/33	24/62
Develop SAE opportunities for students	1/3	15/38	23/59
Utilize the community to develop SAE opportunities for students	4/10	14/36	21/54

Table 5: *Teacher Self-Efficacy in SAE Domain: f/P (N=39)*

Note: f= frequency, P=percentage. Low = 1-3, Moderate = 4-6, High = 7-9. 1= No Capability, 3= Very Little Capability, 5= Some Capability, 7= Quite a Bit of Capability, 9= A Great Deal of Capability

Results for Objective 3: Describe beginning agricultural education teachers' perceived level of importance of job-related factors

Teachers perceived level of importance of job-related factors was assessed using a researcher-created with three domains: Classroom, FFA, and SAE (Tables 6-8). Teachers in this study indicated that most items were in the high importance category. The summated mean for perceived importance was 7.95 (Table 9). The overall importance rating was higher than the teachers reported levels of teacher self-efficacy.

Teachers' perceived importance in the classroom domain

In the Classroom domain (Table 6), teachers indicated that most items were in the high importance category. Complete data are presented in Appendix H. The summated mean for the classroom domain was 7.79 (Table 9). The classroom domain had the lowest importance rating when compared to the FFA and SAE domains.

All of the items had at least 55 percent of the responses in the high importance category. Managing student behavior and motivating students to learn were rated as the most important items; 97 percent of the respondents placed these items in the high category.

Three items had less than 80 percent of the responses in the high category: managing an agricultural mechanics laboratory, creating lesson plans for instructions, and managing a horticulture laboratory. Managing a horticulture laboratory or greenhouse was rated as the least important item. Six of the items had ratings in the low category: implementing a curriculum in agriculture, effectively conducting field trips, using a

variety of assessment strategies, adjusting lessons to the proper level for individual students, managing an agricultural mechanics laboratory, and managing a horticulture laboratory/greenhouse.

How important is it to:	Low	Moderate	High
Manage student behavior	0	1/3	38/97
Motivate students to learn	0	1/3	38/97
Provide alternative explanations when students are confused	0	2/5	37/95
Implement a curriculum in agriculture	1/3	1/3	37/95
Craft good questions for my students	0	2/5	37/95
Teach students with special needs	0	2/5	37/95
Use a variety of teaching techniques	0	3/8	36/92
Evaluate student learning	0	3/8	36/92
Effectively conduct field trips	1/3	2/5	36/92
Provide appropriate challenges for very capable students	0	4/10	35/90
Respond to difficult questions from my students	0	4/10	35/90
Implement alternative strategies in my classroom	0	4/10	35/90
Teach students to think critically	0	5/13	34/87
Utilize computers in my teaching	0	5/13	33/85
Utilize multimedia in my teaching	0	6/15	33/85
Use a variety of assessment strategies	1/3	6/15	32/82
Adjust my lessons to the proper level for individual students	1/3	6/15	32/82
Manage an agricultural mechanics laboratory	2/5	7/18	30/77
Create lesson plans for instruction	0	12/31	27/69
Manage a horticulture laboratory/greenhouse	5/13	11/28	22/56

Table 6: *Teacher Perceived Importance in Classroom Domain: f/P (N=39)*

Note: f= frequency, P=percentage. Low = 1-3, Moderate = 4-6, High = 7-9. 1= Not Important, 3= Slightly Important, 5= Fairly Important, 7= Important, 9= Very Important

Teachers' perceived of importance in the FFA domain

In the FFA domain (Table 7), teachers indicated that most items were in the high importance category. Complete data are presented in Appendix H. The summated mean for this domain was 8.08; teachers rated this domain as the most important when compared to the classroom and SAE domains (Table 9).

All teachers indicated high importance on four items: supervising students during FFA trips and activities, training a chapter officer team, assisting students in facilitating FFA fundraising activities, and assisting students in developing an effective public relations program for the FFA chapter. All but two of the items in this construct had over ninety percent agreement in the high importance category.

Only one item in this construct had a response in the low importance category, the utilization of a program advisory board. The utilization of the FFA alumni was the least important item in this construct, with 26 percent of the respondents indicating it was of moderate importance.

How important is it to:	Low	Moderate	High
Supervise students during FFA trips and activities	0	0	39/100
Train a chapter officer team	0	0	39/100
Assist students in facilitating FFA fundraising activities	0	0	39/100
Assist students in developing an effective public relations program for the FFA chapter	0	0	39/100
Assist students in planning FFA chapter activities	0	1/3	38/97
Assist students in preparing a Program of Activities	0	1/3	38/97
Assist students in preparing FFA degree applications	0	2/5	37/95
Advise FFA meetings	0	2/5	37/95
Assist students planning FFA banquets	0	2/5	37/95
Coach leadership based (eg. Speaking, Parliamentary Procedure etc.) CDE teams	0	2/5	37/95
Recruit new FFA members	0	3/8	36/92
Coach skills based (eg. Evaluation, Ag. Mechanics, etc.) CDE teams	0	3/8	36/92
Assist students in recruiting new FFA members	0	4/10	35/90
Assist students in developing community service projects	0	4/10	35/90
Assist students in preparing FFA proficiency applications	0	4/10	35/90
Utilize a Program Advisory Board	1/3	7/18	29/74
Utilize the FFA Alumni	0	10/26	28/72

Table 7: *Teacher Perceived Importance in FFA Domain: f/P (N=39)*

Note: f= frequency, P=percentage. Low = 1-3, Moderate = 4-6, High = 7-9. 1= Not Important, 3= Slightly Important, 5= Fairly Important, 7= Important, 9= Very Important

Teachers' perceived of importance in the SAE domain

In the SAE domain (Table 8), teachers indicated that most items were in the high importance category. Complete data are presented in Appendix H. The summated mean for this domain was 8.02; teacher rated this domain as slightly less important than the FFA domain, and more important than the classroom domain (Table 9).

All but one of the items in the SAE domain had at least 90 percent of responses in the high importance category. Two items had 97 percent of the responses in the high importance category: the supervision of student placement SAE programs, and showing student the value of SAE programs.

Only one item, assisting students in receiving recognition for SAE projects had responses in the low importance category. Four items had 10 percent of the responses in the moderate category: making recommendations for students' SAE projects, utilizing the community to develop SAE opportunities for students, and utilizing resources to make recommendations to students' SAE projects.

How important is it to:	Low	Moderate	High
Supervise student placement SAE programs	0	1/3	38/97
Show students the value of SAE programs	0	1/3	38/97
Motivate students to have an SAE program	0	2/5	37/95
Assist students in keeping SAE records	0	2/5	37/95
Provide career exploration opportunities for students	0	2/5	37/95
Supervise student production SAE programs	0	2/5	37/95
Develop SAE opportunities for students	0	2/5	37/95
Supervise student entrepreneurship SAE programs	0	2/5	37/95
Conduct home/SAE visits	0	3/8	36/92
Make recommendations for students' SAE projects	0	4/10	35/90
Utilize the community to develop SAE opportunities for students	0	4/10	35/90
Utilize resources to make recommendations to students' SAE projects	0	4/10	35/90
Assist students in receiving recognition for SAE projects	1/3	4/10	34/87

Table 8: *Teacher Perceived Importance in SAE Domain: f/P (N=39)*

Note: f= frequency, P=percentage. Low = 1-3, Moderate = 4-6, High = 7-9.1= Not Important, 3= Slightly Important, 5= Fairly Important, 7= Important, 9= Very Important

Results for Objective 4: Describe the discrepancy between teacher self-efficacy of beginning agricultural education teachers and their perceived level of importance of job-related factors.

The discrepancy between teacher self-efficacy and teachers' perceived importance was determined by calculating the difference between the two constructs, and reported as absolute values. The overall discrepancy score and the discrepancy scores in the three domains are reported in Table 9. The highest discrepancy score was for the SAE domain (1.06). The lowest discrepancy score was for the Classroom domain (0.64). The overall discrepancy score between overall teacher self-efficacy in agricultural education and teachers' perceived importance was 0.90.

Domain	Perception of teacher self-efficacy		Perceived importance		Discrepancy score ^c
	μ^a	σ	μ^b	σ	
Classroom	7.15	0.93	7.79	0.85	0.64
FFA	7.04	1.15	8.08	0.80	1.04
SAE	6.96	1.35	8.02	0.81	1.06
Overall	7.05	0.99	7.95	.73	0.90

Table 9: Summated Mean Scores of Domains

^a 1 = No Capability to 9 = A Great Deal of Capability

^b 1 = Not Important to 9 = Very Important

^c Perceived importance score minus perception of teacher self-efficacy

Results for Objective 5: Describe the relationship among demographic characteristics of beginning agricultural education teachers and their perceived level of teacher self-efficacy.

Relationships among demographic characteristics and teacher self-efficacy are reported in Table 10. A scatterplot was drawn to ensure that the data met the assumptions of homoscedasticity and linearity. The differences in the summated means of overall teacher self-efficacy and three domains based on nominal demographic characteristics are presented in Table 11. Davis's (1971) conventions were used to describe the relationships: .01 to .09 = negligible association, .10 to .29 = low association, .30 to .49 = moderate association, .50 to .69 = substantial association, .70 or higher = very strong association.

Demographic Characteristic	Classroom Domain ρ	FFA Domain ρ	SAE Domain ρ	Overall Self-Efficacy ρ
Age ^a	.283	.157	.253	.264
Years of Teaching ^a	.118	.135	.165	.155
Competence of Teaching Mentor ^b	.093	.067	.072	.092
Support of Teaching Mentor ^b	.014	.005	.058	.019
Excellence of first year of teaching ^b	.313	.313	.140	.255
Support of school principal ^b	-.090	.090	-.027	.024
Support of district superintendent ^b	.170	.180	.144	.159
Excellence of student teaching experience ^b	.040	.131	.220	.190

Table 10: Correlations (ρ) among efficacy domains and teacher demographics (N=39)

^a Pearson

^b Kendall's tau-b. Gender: 1 = Male, 2 = Female; Level of Education: 1 = B.S., 2 = M.S.; High School AgEd Enrollment & FFA Membership: 1 = No, 2 = Yes

The age of teachers had a positive, low relationship ($r = .264$) with overall teacher self-efficacy; therefore, the characteristic age explained seven percent of the variance ($r^2 = .07$) in the overall teacher self-efficacy score. Age was also moderately related to the classroom domain ($r = .283$), explaining eight percent of the variance ($r^2 = .08$).

Teaching experience (years of teaching) had a positive, low relationship with overall teacher self-efficacy ($r = .155$). Teachers reported competence of their mentor teacher had a negligible relationship teacher self-efficacy and each of the three domains.

Teachers perceived support of their mentor teacher also had a negligible relationship with teacher self-efficacy and each of the three domains.

Teacher perceptions of their first year of teaching had a positive moderate association with the classroom domain ($r = .31$), and the FFA Domain ($r = .31$); explaining 10 percent of the variance ($r^2 = .10$) in each of the domains. Perceptions of the first year of teaching had a positive low association with overall teacher self-efficacy ($r = .26$), and the SAE domain ($r = .14$).

Teacher perceptions of their student teaching experience had a positive low association ($r = .19$) with overall teacher self-efficacy; the FFA domain ($r = .13$), and the SAE domain (0.22); explaining five percent of the variance in the SAE domain. Teacher perceptions of their student teaching experience and the classroom domain had a negligible relationship.

The support of the school principal had a negligible association with each of the three domains and overall teacher self-efficacy. The support of the district superintendent had a low positive association with overall teacher self-efficacy ($r = .16$), the classroom domain ($r = .17$), and the FFA domain ($r = .18$).

Demographic Characteristic	Classroom Domain		FFA Domain		SAE Domain		Overall Self-Efficacy	
	μ	σ	μ	σ	μ	σ	μ	σ
B.S. Degree	7.17	0.91	7.05	1.18	6.98	1.39	7.07	0.98
M.S. Degree	7.05	1.12	6.96	1.09	6.86	1.21	6.97	1.09
Male	7.16	1.02	7.22	1.28	7.17	1.29	7.17	1.09
Female	7.14	0.88	6.87	1.02	6.76	1.4	6.94	0.89
Agricultural Education & FFA in High School	7.05	0.90	7.06	1.14	6.97	1.32	7.03	0.95
No Agricultural Education or FFA in High School	7.79	1.04	6.83	1.36	6.89	1.71	7.23	1.31

Table 11: Comparison of domains by demographic characteristics (N=39)

Teachers with a B.S. Degree had slightly higher scores in overall teacher self-efficacy and in each of the three domains than teachers with a M.S. degree. Male teachers had slightly higher scores in each domain and in overall teacher self-efficacy than female teachers. The largest difference between males and females was in the SAE domain. Teachers who were not enrolled in agricultural education in high school and were not FFA members had higher scores in overall teacher self-efficacy and in the classroom domain, but reported lower levels of teacher self-efficacy in the FFA and SAE domains.

In conclusion, the excellence of the student teaching experience and the excellence of the first year of teaching were related to overall teacher self-efficacy. Age was related to teacher self-efficacy; the older teachers had higher levels of teacher self-

efficacy. However, teachers perceptions of the excellence of their student teaching experience was negligibly related with the classroom domain. Male teachers were slightly more efficacious overall, and especially more efficacious in the SAE domain. Teachers who were not enrolled in agricultural education and were not FFA members were slightly more efficacious overall and in the classroom domain, but less efficacious in the FFA and SAE domains than teachers who were FFA members and were enrolled in agricultural education.

Results for Objective 6: Describe the relationship between teacher self-efficacy, demographic characteristics of beginning agricultural education teachers and their intentions to remain in the profession.

Nearly all of the respondents (38) indicated they intended to return to teaching the following year. One individual reported responded that he/she did not plan to return to teaching the following year. Therefore, the researcher was unable to use logistic regression analysis to answer objective six because there were insufficient cases in each category of the dependent variable.

CHAPTER 5
CONCLUSIONS/RECOMMENDATIONS/IMPLICATIONS

"To succeed, one cannot afford to be a realist."

~ Albert Bandura ~

Address before the American Psychological Association, 1998

Summary of Conclusions

The frame for this study was beginning agriculture teachers in Ohio who were licensed through The Ohio State University Department of Human and Community Resource Development teacher preparation program. The Ohio Department of Education identified 119 beginning teachers with four years of experience or less. The frame provided by the Ohio Department of Education was cross referenced with the student teaching placement records from the Department of Human and Community Resource Development. A total of 154 student teachers (2003-2007) were identified by the Department of Human and Community Resource Development, 47 of these were currently teaching in the state of Ohio. The final frame for the study was 47; the final number of respondents was 39, yielding a total response rate of 83 percent.

Thirty-five percent of teachers eligible for licensure upon completion of the agricultural education teacher preparation program in the identified time frame were

currently teaching in Ohio. Comparatively, an estimated 70 percent of teacher candidates nationwide planned to enter the profession in 2005-2006 (Kantrovich, 2007).

Data for this study were collected using a researcher-developed instrument. The development of a reliable and valid instrument, that is specific to agricultural education, is a step forward in understanding teacher self-efficacy. Future research on teacher self-efficacy in agricultural education will be more specific and directed as a result of the development of this instrument. The instrument incorporated domains of functioning specific to agricultural education: Classroom, FFA and SAE (Phipps, Osborne, Dyer & Ball, 2008). This instrument may be used as a needs assessment tool, as it incorporates the Borich (1980) needs assessment model. The items comprising the three domains (Duncan & Ricketts, 2006; Duncan, Ricketts, Peake, & Uessler, 2005; Garton & Chung, 1996; Joerger, 2002; Myers, Dyer, & Washburn, 2005; Phipps, Osborne, Dyer & Ball, 2008; Roberts & Dyer, 2004) were a comprehensive list of the job-specific tasks required of agricultural educators. The creation of a teacher self-efficacy measurement, specific to agricultural education, addresses concerns of Bandura (2006) about the usefulness of a general measure of teacher self-efficacy. “The ‘*one measure fits all*’ approach to measuring teacher self-efficacy usually has limited explanatory and predictive value because most of the items in an all-purpose test may have little or no relevance to the domain of functioning” (Bandura, 2006, p.307).

Summary of Conclusions for Objective 1: Describe the demographic characteristics of beginning agricultural educators.

Teachers in this study were between 24 and 26 years of age. Approximately one-half were male and one-half were female. Most were in their third year of teaching. Almost all of the teachers were enrolled in agricultural education in high school and were FFA members. Less than 20 percent of the teachers had completed a M.S. degree. All but one of the teachers indicated they planned to return to teaching the following year. Teachers reported favorable perceptions of the competence and support of their mentor teachers. Almost all of the teachers agreed that their student teaching and first year of teaching were excellent experiences. Most of the teachers agreed that their principal and district superintendent were supportive of the agricultural education program.

Based on these findings, the researcher concluded that the average beginning teacher was in their third year of teaching, and was around 25 years of age. The average teacher was an FFA member in high school, had their B.S. degree, and held favorable perceptions of the competence and support of their mentor teachers. The average teacher believed their principal and superintendent were supportive, they had an excellent student teaching experience, as well as an excellent experience in their first year of teaching. The average teacher planned to remain in the profession of agricultural education the following year.

Summary of Conclusions for Objective 2: Describe the perceived teacher self-efficacy of beginning agricultural education teachers

Beginning agriculture teachers perceived themselves to be fairly efficacious. Teachers reported the lowest levels of teacher self-efficacy in the SAE domain, and the highest levels in the classroom domain. Teachers in this study indicated they had high levels of capability on most items in the classroom domain. Three items had noticeably lower ratings in the classroom domain: the management of a horticulture laboratory or greenhouse, adjusting lesson plans for individual students, and the management of an agricultural mechanics laboratory.

In the FFA domain, teachers reported the highest levels of capability in assisting students in planning FFA banquets and fundraisers. Teachers reported lower levels of teacher self-efficacy on items related to preparing FFA degree and proficiency applications, utilizing a program advisory board and utilizing the FFA Alumni. In the SAE domain, teachers reported the highest levels of teacher self-efficacy on assisting student in receiving recognition for SAE projects and providing career exploration opportunities for students. The items with the lowest reported levels of teacher self-efficacy were developing SAE opportunities for students, utilizing the community to develop SAE opportunities for students, and motivating students to have an SAE program.

The researcher concluded that the average teacher in this study was more efficacious in the classroom domain and less efficacious in the SAE domain. This may indicate the need for professional development in SAE program management and

supervision. The typical teacher was the least capable in managing horticulture and agricultural mechanics facilities, utilizing the FFA Alumni, and utilizing the community to develop SAE opportunities for students.

Summary of Conclusions for Objective 3: Describe beginning agricultural education teachers' perceived level of importance of job-related factors

Utilizing a modified Borich (1980) needs assessment model, teachers' perceptions of the importance of items in the three domains: classroom, FFA and SAE were assessed. Overall, teachers' ratings of importance were greater than their reported teacher self-efficacy.

The FFA domain was rated as the most important, while the classroom domain was rated as the least important. In the FFA domain, the majority of the items were rated in the high importance category; all teachers indicated four items (supervising students during FFA trips and activities, training chapter officer teams, assisting student in facilitating fundraisers, and assisting students in developing an effective public relations program) were in the high importance category. The items rated as the least important in the FFA domain were the utilization of the FFA Alumni and utilizing a Program Advisory Board.

In the SAE domain, the majority of the items were rated in the high importance category. Only one item, assisting students in receiving recognition for SAE projects had any responses in the low importance category. In the classroom domain, teachers rated most of the items in the high importance category. The management of a horticulture laboratory or greenhouse, creating lesson plans for instruction, and the management of an agricultural mechanics laboratory were rated as the least important in the classroom domain.

The average teacher in this study reported the FFA domain was the most important and the classroom domain was the least important. This finding indicates misplaced priorities that may require a paradigm change amongst teachers, the Ohio Department of Education, and the Ohio FFA Association. Teachers indicated that managing student behavior, providing alternative explanations when students are confused, and motivating students to learn were the most important in the classroom domain. In the FFA domain, teachers believed supervising students during FFA trips and training chapter officer teams were the most important items. Teachers believed supervising student placement SAE programs, showing students the value of SAE programs and motivating students to have an SAE program were the most important items in the SAE domain. Although teachers believed the FFA domain was the most important, utilizing the FFA Alumni was the least important item. In light of these findings, the researcher concluded that the typical teacher believes the FFA domain is more important than the classroom domain.

Summary of Conclusions for Objective 4: Describe the discrepancy between teacher self-efficacy of beginning agricultural education teachers and their perceived level of importance of job-related factors.

The teachers' perceived importance of all three domains was higher than their perceived teacher self-efficacy; therefore, the overall importance rating was higher than the teacher self-efficacy rating. The domain with the greatest discrepancy was the SAE domain. The domain with the smallest discrepancy was the classroom domain. The overall discrepancy between teacher self-efficacy and importance was similar to that of the FFA domain.

Based on these findings, the researcher concluded that professional development was needed for beginning teachers, especially in the SAE and FFA domains. Teachers require the most assistance in the SAE domain.

Summary of Conclusions for Objective 5: Describe the relationship among demographic characteristics of beginning agricultural education teachers and their perceived level of teacher self-efficacy.

The demographic characteristic that revealed the strongest positive relationship with overall teacher self-efficacy was the age of the teacher. There was a strong positive relationship between the all three domains and teachers perceptions of the excellence of their first year of teaching. Males had slightly higher levels of teacher self-efficacy than females. Teachers with a B.S. degree had slightly higher levels of teacher self-efficacy than individuals with a M.S. degree. Teachers who were not FFA members or enrolled in agricultural education in high school had lower teacher self-efficacy in the FFA and SAE domains, but higher scores in the classroom domain and overall teacher self-efficacy than teachers who were FFA members and were enrolled in agricultural education.

The researcher concluded that the first year of teaching is important in developing teacher self-efficacy, especially in the classroom and FFA domains. The excellence of the student teaching experience also appeared to influence the sense of efficacy in the SAE domain. Teachers who did not have FFA experience believed they were less capable in the management of the FFA and SAE components of the agricultural education program, and, therefore, may require additional professional development in those areas. The typical male teacher was more efficacious than the typical female teacher; therefore, females may require additional assistance to build teacher self-efficacy.

Recommendations/Discussion

Teachers in this study reported that their student teaching experience, and their first year of teaching were excellent. Almost all of the teachers in this study intended to remain in the teaching profession. Although retention could not be predicted by the demographic variables in the study, an excellent student teaching experience and an excellent first year of teaching may have helped to promote retention. The quality of the student teaching experience and the quality of the first year of teaching both had positive relationships with overall teacher self-efficacy, which is expected to contribute to teacher retention. Teacher educators should continue to provide excellent student teaching experiences for teacher candidates. Schools and school districts should focus on providing induction assistance and professional development for first year teachers.

A small number of teacher candidates in Ohio seem to enter the teaching profession, when compared with the national average. Nationally, approximately 70 percent of qualified candidates enter the teaching profession (Kantrovich, 2007), compared to 35 percent found in this study. Retention in the profession of teaching does not seem to be problematic according to the results of this study. However, the entrance of licensed teachers into the profession of agricultural education in Ohio does seem to be an issue. This study did not track individuals who took teaching positions out-of-state, or teachers who had left the profession before the study took place, therefore, a larger number of teachers may be entering the profession than this study reported. Even so, teacher educators should investigate why such a small number of individuals enter the agricultural education profession in Ohio. Data should be obtained, using the instrument

developed for this study, from individuals who student teach and do not enter the profession of agricultural education to compare the respective levels of teacher self-efficacy of the groups. Using the *TSES* (Tschannen-Moran & Woolfolk Hoys, 2001), several studies (Knobloch & Whittington, 2003b; Wolf, Foster, & Birkenholz, 2008) have identified levels of teacher self-efficacy of teacher candidates that are similar to the levels identified in this study of beginning teachers. Researchers have speculated that teacher candidates may have an “inflated” sense of teacher self-efficacy because of the support systems in place during the student teaching experience (Knobloch, 2006). However, a comparison cannot be drawn, based on the available data, which explains the intentions of teacher candidates to enter the profession of agricultural education based on their levels of teacher self-efficacy. Therefore, other intervening factors affecting teacher candidates decisions to enter the profession should be examined.

Teachers were the least efficacious in the SAE domain. The SAE domain had the greatest discrepancy score, indicating that teachers believe the domain is important, but they are deficient in SAE related areas. Remediation of SAE program management skills should be a priority for teacher education and a focus of professional development for beginning teachers. Teachers rated the FFA domain as the most important domain; with the second largest discrepancy score. The discrepancy score in this domain indicated that teachers believe they are more capable managing FFA related tasks than SAE related tasks, relative to the importance of those domains. More emphasis in undergraduate course work should be placed on the SAE components of program management, rather than on the FFA components.

The changes in teacher self-efficacy, utilizing this instrument, should be studied longitudinally, rather than in cross-section, to address the possible changes in the domains over time. Additionally, experiences during the teacher preparation program and the induction years of teaching that contribute to teacher self-efficacy in the three domains should be studied in an attempt to inform teacher preparation in agricultural education.

Teachers were the most efficacious in the Classroom domain, yet, rated it as the least important domain. Teachers believe they are capable in the classroom domain; therefore, no substantial professional development is needed in this area. Although traditional models of agricultural education (Phipps, Osborne, Dyer and Ball, 2008), place equal emphasis on each of the three components (classroom, FFA & SAE), perhaps greater emphasis should be placed on the classroom domain for beginning teachers. The fact that teachers rate the classroom domain as the least important is troubling, as the primary responsibilities of an agricultural educator take place in the classroom. Perhaps the Ohio Association of Agricultural Educators and the Ohio Department of Education should encourage teachers to place more emphasis on the classroom domain. Teacher educators should encourage teacher candidates to prioritize the classroom domain over the FFA and SAE domains, especially in the beginning years of teaching.

Teachers who were not FFA members and were not enrolled in agricultural education in high school had higher overall teacher self-efficacy and higher teacher self-efficacy in the classroom domain. However, these individuals had lower teacher self-efficacy in the FFA and SAE domain. Because the FFA and SAE domains were rated by the teachers as the most important, this may indicate a greater need for in-service

education for teachers who were not involved in the FFA organization. Teacher educators should ensure that all teacher candidates, regardless of their backgrounds, have the necessary skills in the FFA and SAE domains. The Ohio Association of Agricultural Educators and the Ohio Department of Education should be aware of this difference and provide assistance to teachers who were not involved in agricultural education in high school.

The equal number of males and females in this study indicate that an increasing number of female teachers are entering the profession of agricultural education, when compared to the overall number of female teachers. In the 2007-2008 school year, approximately 26 percent of the teachers in the state of Ohio (ODE, 2008a) were female. However, as females evidenced lower teacher self-efficacy in all three domains, further studies should be conducted to explain the lower sense of teacher self-efficacy of females. The difference between males and females was the most pronounced in the SAE domain, indicating that female teachers were the least efficacious in assisting students with SAE programs. Teacher educators and the Ohio Association of Agricultural Educators should be aware of the differences between males and females and take steps to assist female teachers in areas where they seem to be less efficacious. The reasons for the differences in teacher self-efficacy between males and females should be examined. If females have consistently lower teacher self-efficacy, according to the literature, they would be less likely to remain in teaching. Although the results of this study do not indicate that gender differences influence retention, the gender differences in teacher self-efficacy merit further study.

Implications

The teacher self-efficacy scores on this instrument mirror the levels of teacher self-efficacy reported in studies of beginning agricultural education teachers and teacher candidates using Tschannen-Moran, and Woolfolk Hoys' (2001) *Teachers' Sense of Efficacy Scale (TSES)* (Knobloch, 2001; Knobloch & Whittington, 2002; Knobloch & Whittington, 2003b, Wheeler & Knobloch, 2006; Roberts, Harlin, & Ricketts, 2006).

The utilization of this instrument will allow for clearer and more comprehensive analysis of agricultural educators teacher self-efficacy, as well as incorporate domains of functioning that are essential and specific to agriculture education (Phipps, Osborne, Dyer & Ball, 2008). The incorporation of the Borich (1980) needs assessment model allowed for the identification of discrepancies between teacher self-efficacy and importance in the domains essential for an agricultural educator. The development of this instrument as a measure of agricultural educator teacher self-efficacy and as a needs assessment model will allow future research on agricultural education teacher self-efficacy.

Teachers rated the classroom domain as the least important of the three and the FFA domain as the most important. The need for a paradigm shift is obvious when considering teachers' perceptions of the importance of the FFA domain. As stated by Newcomb, McCracken, Warmbrod, and Whittington (2004), "Too many agriculture teachers view the FFA as the purpose for the existence of agricultural instruction. Whenever such a perspective governs their use of FFA, the results are invariably disappointing" (p. 284). The authors also state that FFA should be viewed as an integral

component of the curriculum, a teaching tool, rather than the driving force behind agricultural education. Additional research should be conducted to examine why teachers believe that the classroom domain is the least important domain, and the FFA domain is the most important.

The teachers in this study were all beginning agricultural educators in the state of Ohio. The findings revealed approximately the same number of male and female teachers, indicating an increasing number of female agricultural educators. The finding that male teachers were more efficacious than female teachers conflicts with previous research (Ross, Cousins & Gadalla, 1996). However, as agricultural education is a profession that has been traditionally male dominated, this finding is not surprising.

A surprising number of beginning teachers had their M.S. degree, indicating that some teachers are completing their graduate education prior to teaching, or while teaching. Additionally, teachers who possessed an M.S. degree had lower overall levels of teacher self-efficacy. This finding conflicts with previous literature indicating that graduate education increased teacher self-efficacy (Hoover-Dempsey, Bassler, & Brissie, 1987). Teachers with their M.S. degree may have a less idealistic view of their capabilities as teachers; or their teacher-self efficacy may be negatively affected by the acquisition of their M.S. degree. Teachers who completed their M.S. degree while teaching may have been overloaded, thus, negatively affecting their teacher self-efficacy. However, as only eighteen percent of the individuals who completed the instrument had a M.S. degree, and the conditions under which they completed their graduate education were not investigated, these conclusions should be substantiated by further research.

Almost all of the teachers in this study were enrolled in agricultural education during high school, and were FFA members. The homogenous nature of this group indicates that very specific populations are attracted to the profession of agricultural education. The teachers who were not in FFA or enrolled in agricultural education had lower teacher self-efficacy in the FFA and SAE domains, supporting Bandura's (1986) assertion that past experiences build a sense of teacher self-efficacy. Teachers who were not in FFA or enrolled in agricultural education had higher overall teacher self-efficacy and higher teacher self-efficacy in the classroom domain.

Most of the teachers in this study indicated that they would be returning to teaching; failing to support data indicating that many teachers leave the profession early in their careers (National Center for Educational Statistics, 2007; Ingersoll, 2001). The favorable perceptions that teachers reported with regards to the excellence of their student teaching experience support the postulation that the quality of the student teaching experiences influences teacher self-efficacy and, therefore, retention (Woolfolk, 2000; Bandura, 1994; Darling-Hammond, Chung & Frelow, 2002; Ross, Cousins & Gadalla, 1996). As teachers in this study indicated that they would return to the teaching profession, the levels of teacher self-efficacy in agricultural education found in this study can be used to describe teachers who stay in the teaching profession. Data should be obtained from teacher candidates who did not enter the profession and teachers who left the profession; allowing for a comparison between teachers who remain in the profession, teachers who leave, and teachers who choose not to enter the profession.

The retention rates in this study fail to support previous findings indicating that many beginning teachers leave the profession of teaching within the first five years

(National Center for Educational Statistics, 2007; Ingersoll, 2001). A possibility exists that the high retention rates of beginning agricultural educators in this study are due to the unique characteristics of the agricultural education program. Agricultural educators develop close bonds with their students. Students in agricultural education have the option to enroll in courses for four years or more, interact with their agriculture teacher through the FFA organization, and spend a significant amount of time with their teachers during home and Supervised Agricultural Education program visits. In addition to the close working relationship with students, agricultural educators often develop close professional relationships in the community with parents, agricultural organizations and agencies, the cooperative extension system, community service organizations, and school partners (Phipps, Osborne, Dyer & Ball, 2008). These relationships likely encourage teachers to be more invested in their communities than other teachers, more committed to the profession of agricultural education, and more likely to remain in the profession.

Need for Further Study

1. Studies of teacher self-efficacy should be replicated in Ohio to further substantiate the findings and further validate the instrument.
2. Studies of teacher self-efficacy should be replicated in other states and nationwide.
3. The changes in agricultural education teacher self-efficacy should be studied longitudinally to address the possible changes in the domains over time.
4. Individuals (in the time frame of this study), who have left the teaching profession, or did not enter the teaching profession should be compared to the teachers in this study.
5. The gender difference in agricultural education teacher self-efficacy should be examined.
6. Experiences during teacher preparation, especially the student teaching internship, should be examined to determine their contribution to agricultural education teacher self-efficacy.
7. Personal characteristics of teachers that are related to agricultural education teacher self-efficacy should be examined.
8. The school and community characteristics that are related to agricultural education teacher self-efficacy should be examined.
9. Induction experiences and professional development experiences of beginning teachers that are related to agricultural education teacher self-efficacy should be examined.
10. Career and organizational commitment and their relationship to agricultural education teacher self-efficacy should be examined.

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APPENDIX A
PANEL OF EXPERTS

PANEL OF EXPERTS

Dr. Larry E. Miller	Professor, Agricultural Education
Dr. Robert J. Birkenholz	Professor, Agricultural Education
Dr. M. Susie Whittington	Associate Professor, Agricultural Education
Dr. Jonathan J. Velez	Assistant Professor, Agricultural Education
Ryan M. Foor	Graduate Student, Agricultural Education
Daniel D. Foster	Graduate Student, Agricultural Education

APPENDIX B
PRENOTICE EMAIL

PRENOTICE EMAIL

April 15, 2008

Dear <Name>

In a few days you will receive a request by email to complete a questionnaire about beginning agriculture teachers. You have been identified as a graduate of The Ohio State University's agricultural education program who has been teaching agricultural education in Ohio for less than 5 years.

I am contacting you in advance for two reasons: 1) to provide notice that the questionnaire will be delivered using the secure internet survey provider SurveyMonkey®, and 2) provide you with the opportunity to request a mailed copy of the questionnaire.

You will find the link to the questionnaire in the email I will be sending in a few days. If you would like a mailed copy, please notify me by email at wolf.375@osu.edu, and provide your mailing address.

This research project will provide important information about beginning agriculture teachers, and your participation is invaluable. In addition, you will receive \$5 as a token of appreciation upon receipt of the completed questionnaire.

Yours in quality education,



Kattlyn Wolf

Robert E. Taylor Fellow

Agricultural and Extension Education

The Ohio State University

APPENDIX C
COVER LETTER

COVER LETTER

April 17, 2008

Dear <Name>

You have been identified as a graduate of The Ohio State University's agricultural education program who has been teaching agricultural education in Ohio for less than 5 years. You are being asked to voluntarily participate in a research study. This research study is intended to assess your perceptions as a beginning agriculture teacher.

Your responses to this questionnaire will greatly assist in improving teacher preparation and teacher induction programs. The questionnaire will take approximately 15 minutes to complete. There are no known risks to your participation in completing this questionnaire. Your participation is voluntary. You may answer some or none of the questions. Your results will be kept confidential; your name will not be associated with your responses.

You will receive \$5 as a token of appreciation for completing the questionnaire; this will be mailed to the address that you provide at the end of the questionnaire.

If you have questions concerning your rights as a research subject, you may call The Ohio State Human Subjects Protection Program at (614) 688-8457. Completing this questionnaire implies that you are giving permission for the investigator to use your responses for research purposes.

Thank you for your time!



Kattlyn Wolf

Robert E. Taylor Fellow

Agricultural and Extension Education

The Ohio State University

APPENDIX D

QUESTIONNAIRE AND COVER LETTER

Beginning Agriculture Teachers Assessment



Department of Human and Community
Resource Development

Dear Agricultural Educator,

You are being asked to voluntarily participate in a research study. This research study is intended to assess your perceptions as a beginning agriculture teacher. Your response to this questionnaire will greatly assist in improving teacher preparation and teacher induction programs. The questionnaire will take approximately 15 minutes to complete. There are no known risks to your participation in completing this questionnaire. Your participation is voluntary. You may answer some or none of the questions. Your results will be kept confidential.

Thank you for your time!

A handwritten signature in cursive script, reading "Kattlyn Wolf".

Kattlyn Wolf

Robert E. Taylor Fellow

Agricultural and Extension Education

The Ohio State University

Please respond to the following questions related to your capabilities in the following items and how important those items are in your program.

For Example: If you feel that you have 'Some Capability' regarding, "Include the school principal in your program", circle the number 5 on the scale to the left of the item. If you feel that it is 'Slightly Important' to "Include the school principal in your program", circle the number 3 on the scale to the right of the item.

No Capability	Very Little Capability	Some Capability	Quite a Bit of Capability	A Great Deal of Capability		Not Important	Slightly Important	Fairly Important	Important	Very Important								
1	2	3	4	5	6	7	8	9		1	2	3	4	5	6	7	8	9
					Include the school principal in your program													

Respond using this scale to indicate your **capability** relative to each item

Respond using this scale to indicate your perception of the **importance** relative to each item

No Capability	Very Little Capability	Some Capability	Quite a Bit of Capability	A Great Deal of Capability	Please complete both ends of the scale	Not Important	Slightly Important	Fairly Important	Important	Very Important								
1	2	3	4	5		6	7	8	9		1	2	3	4	5	6	7	8
What is your level of capability to:						How Important is it to:												
1	2	3	4	5	6	7	8	9	Motivate students to learn	1	2	3	4	5	6	7	8	9
1	2	3	4	5	6	7	8	9	Manage student behavior	1	2	3	4	5	6	7	8	9
1	2	3	4	5	6	7	8	9	Use a variety of teaching techniques	1	2	3	4	5	6	7	8	9
1	2	3	4	5	6	7	8	9	Teach students to think critically	1	2	3	4	5	6	7	8	9
1	2	3	4	5	6	7	8	9	Create lesson plans for instruction	1	2	3	4	5	6	7	8	9

Respond using this scale to indicate
your **capability** relative to each item

Respond using this scale to indicate
your perception of the **importance**
relative to each item

No Capability
Very Little Capability
Some Capability
Quite a Bit of Capability
A Great Deal of Capability

Please complete
both ends of the
scale

Not Important
Slightly Important
Fairly Important
Important
Very Important

What is your level of capability to:		How Important is it to:
1 2 3 4 5 6 7 8 9	Respond to difficult questions from my students	1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8 9	Craft good questions for my students	1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8 9	Adjust lessons for individual students	1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8 9	Evaluate student learning	1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8 9	Use a variety of assessment strategies	1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8 9	Provide alternative explanations when students are confused	1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8 9	Implement alternative strategies in my classroom	1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8 9	Provide appropriate challenges for very capable students	1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8 9	Teach students with special needs	1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8 9	Utilize computers in my teaching	1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8 9	Utilize multimedia in my teaching	1 2 3 4 5 6 7 8 9

Respond using this scale to indicate
your **capability** relative to each item

Respond using this scale to indicate
your perception of the **importance**
relative to each item

No Capability Very Little Capability Some Capability Quite a Bit of Capability A Great Deal of Capability										Please complete both ends of the scale	Not Important Slightly Important Fairly Important Important Very Important									
What is your level of capability to:											How Important is it to:									
1	2	3	4	5	6	7	8	9	Manage a horticulture laboratory/greenhouse	1	2	3	4	5	6	7	8	9		
1	2	3	4	5	6	7	8	9	Implement a curriculum in agriculture	1	2	3	4	5	6	7	8	9		
1	2	3	4	5	6	7	8	9	Manage an agricultural mechanics laboratory	1	2	3	4	5	6	7	8	9		
1	2	3	4	5	6	7	8	9	Effectively conduct field trips	1	2	3	4	5	6	7	8	9		
1	2	3	4	5	6	7	8	9	Advise FFA meetings	1	2	3	4	5	6	7	8	9		
1	2	3	4	5	6	7	8	9	Train a chapter officer team	1	2	3	4	5	6	7	8	9		
1	2	3	4	5	6	7	8	9	Assist students in planning FFA chapter activities	1	2	3	4	5	6	7	8	9		
1	2	3	4	5	6	7	8	9	Assist students planning FFA banquets	1	2	3	4	5	6	7	8	9		
1	2	3	4	5	6	7	8	9	Assist students in facilitating FFA fundraising activities	1	2	3	4	5	6	7	8	9		
1	2	3	4	5	6	7	8	9	Assist students in preparing FFA degree applications	1	2	3	4	5	6	7	8	9		
1	2	3	4	5	6	7	8	9	Assist students in preparing FFA proficiency applications	1	2	3	4	5	6	7	8	9		
1	2	3	4	5	6	7	8	9	Assist students in preparing a Program of Activities	1	2	3	4	5	6	7	8	9		

Respond using this scale to indicate
your **capability** relative to each item

Respond using this scale to indicate
your perception of the **importance**
relative to each item

No Capability Very Little Capability Some Capability Quite a Bit of Capability A Great Deal of Capability Please complete both sides Not Important Slightly Important Fairly Important Important Very Important																			
What is your level of capability to:										How Important is it to:									
1	2	3	4	5	6	7	8	9	Coach leadership based (Eg. Speaking, Parliamentary Procedure etc.) CDE teams	1	2	3	4	5	6	7	8	9	
1	2	3	4	5	6	7	8	9	Coach skills based (Eg. Evaluation, Ag. Mechanics, etc.) CDE teams	1	2	3	4	5	6	7	8	9	
1	2	3	4	5	6	7	8	9	Utilize the FFA Alumni	1	2	3	4	5	6	7	8	9	
1	2	3	4	5	6	7	8	9	Utilize a Program Advisory Board	1	2	3	4	5	6	7	8	9	
1	2	3	4	5	6	7	8	9	Recruit new FFA members	1	2	3	4	5	6	7	8	9	
1	2	3	4	5	6	7	8	9	Assist students in recruiting new FFA members	1	2	3	4	5	6	7	8	9	
1	2	3	4	5	6	7	8	9	Assist students in developing an effective public relations program for the FFA chapter	1	2	3	4	5	6	7	8	9	
1	2	3	4	5	6	7	8	9	Supervise students during FFA trips and activities	1	2	3	4	5	6	7	8	9	
1	2	3	4	5	6	7	8	9	Assist students in developing community service projects	1	2	3	4	5	6	7	8	9	
1	2	3	4	5	6	7	8	9	Provide career exploration opportunities for students	1	2	3	4	5	6	7	8	9	
1	2	3	4	5	6	7	8	9	Develop SAE opportunities for students	1	2	3	4	5	6	7	8	9	

Respond using this scale to indicate your **capability** relative to each item

Respond using this scale to indicate your perception of the **importance** relative to each item

Please complete both sides																		
What is your level of capability to:																		
How Important is it to:																		
No Capability	Very Little Capability	Some Capability	Quite a Bit of Capability	A Great Deal of Capability		Not Important	Slightly Important	Fairly Important	Important	Very Important								
1	2	3	4	5	6	7	8	9	Motivate students to have an SAE program	1	2	3	4	5	6	7	8	9
1	2	3	4	5	6	7	8	9	Supervise student entrepreneurship SAE programs	1	2	3	4	5	6	7	8	9
1	2	3	4	5	6	7	8	9	Supervise student placement SAE programs	1	2	3	4	5	6	7	8	9
1	2	3	4	5	6	7	8	9	Supervise student production SAE programs	1	2	3	4	5	6	7	8	9
1	2	3	4	5	6	7	8	9	Conduct home/SAE visits	1	2	3	4	5	6	7	8	9
1	2	3	4	5	6	7	8	9	Make recommendations for students' SAE projects	1	2	3	4	5	6	7	8	9
1	2	3	4	5	6	7	8	9	Utilize resources to make recommendations to students' SAE projects	1	2	3	4	5	6	7	8	9
1	2	3	4	5	6	7	8	9	Assist students in keeping SAE records	1	2	3	4	5	6	7	8	9
1	2	3	4	5	6	7	8	9	Utilize the community to develop SAE opportunities for students	1	2	3	4	5	6	7	8	9
1	2	3	4	5	6	7	8	9	Show students the value of SAE programs	1	2	3	4	5	6	7	8	9
1	2	3	4	5	6	7	8	9	Assist students in receiving recognition for SAE projects	1	2	3	4	5	6	7	8	9

Personal Information

I plan to teach agricultural education next year (check one)

Yes ____ No ____

What is your highest level of education (check one):

B.S. ____ M.S. ____

Sex: (check one):

M ____ F ____

What is your Age?

Age _____

How many years have you been teaching (if you are currently in your first year of teaching, answer 1)

Years _____

Were you enrolled in agricultural education in high school (check one):

Yes ____ No ____

Were you an FFA member in high school (check one):

Yes ____ No ____

Please rate your agreement with the following statements by **circling** the number that corresponds to your level of agreement

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree	Not Applicable
My teaching mentor is a competent teacher.	1	2	3	4	5	6	N.A.
My mentor is supportive.	1	2	3	4	5	6	N.A.
My first year of teaching has been/was an excellent experience.	1	2	3	4	5	6	N.A.
My school principal is supportive of my program.	1	2	3	4	5	6	N.A.
My district superintendent is supportive of my program	1	2	3	4	5	6	N.A.
My student teaching experience was excellent.	1	2	3	4	5	6	N.A.

Please share any comments you may have about your experiences as a beginning teacher:

Thank You!



Go Bucks!

APPENDIX E
FIRST REMINDER

FIRST REMINDER

April 24, 2008

Dear <Name>

You have recently received an email invitation to participate in a research study of beginning agricultural educators from The Ohio State University. I am writing to you because your responses are very important in determining the perceptions of beginning teachers. The invitation to take the questionnaire was sent from the secure on-line survey provider Survey Monkey®. Please check your junk-mail folder for the message. If you would prefer to receive a mailed copy of the instrument, please respond to this email message. Again, your responses are very important, and your participation is greatly appreciated.

Thank you for your time,

A handwritten signature in cursive script, reading "Kattlyn Wolf".

Kattlyn Wolf

Robert E. Taylor Fellow

Agricultural and Extension Education

The Ohio State University

APPENDIX F
SECOND REMINDER

SECOND REMINDER

May 12, 2008

Dear <Name>

You have recently received an email invitation to participate in a research study of beginning agricultural educators from The Ohio State University. I am writing to you because your responses are very important in determining the perceptions of beginning teachers.

The invitation to take the questionnaire was sent from the secure on-line survey provider Survey Monkey®. Please check your junk-mail folder for the message. If you would prefer to receive a mailed copy of the instrument, please respond to this email message. Again, your responses are very important, and your participation is greatly appreciated.

As a token of appreciation, you will be mailed a \$5 gift card upon receipt of the completed instrument.

Thank you for your time,

A handwritten signature in cursive script, reading "Kattlyn Wolf".

Kattlyn Wolf

Robert E. Taylor Fellow

Agricultural and Extension Education

The Ohio State University

APPENDIX G
FOLLOW-UP PHONE CONTACT

FOLLOW- UP PHONE CONTACT TEXT

Hello, is <Teachers Name> there? This is Kattlyn Wolf from The Ohio State University. How are you today? I am calling to see if you receive a questionnaire from my about beginning agricultural teachers.

(If teachers had received the questionnaire). Wonderful, I would appreciate if you could complete it and return it to me.

(If teachers had not received the questionnaire). I would be happy to send you another questionnaire.

Thank you for your time!

APPENDIX H
SUPPORTING DATA

What is your level of capability to:		1	2	3	4	5	6	7	8	9
126	Utilize multimedia in my teaching	0	0	0	1/3	1/3	6/15	7/18	11/28	12/31
	Utilize computers in my teaching	0	0	0	1/3	2/5	5/13	9/23	10/26	12/31
	Implement a curriculum in agriculture	0	0	0	2/5	1/3	5/13	7/18	14/36	10/26
	Evaluate student learning	0	0	0	0	2/5	6/15	9/23	14/36	8/21
	Create lesson plans for instruction	0	0	0	0	2/5	6/15	12/31	8/21	10/26
	Effectively conduct field trips	0	1/3	0	0	1/3	7/18	10/26	9/23	11/28
	Provide alternative explanations when students are confused	0	0	0	0	1/3	6/15	14/36	11/28	7/18
	Respond to difficult questions from my students	0	0	0	0	2/5	5/13	15/39	9/23	8/21
	Use a variety of teaching techniques	0	0	0	0	3/8	3/8	17/44	8/21	8/21
	Use a variety of assessment strategies	0	0	0	1/3	3/8	4/11	13/34	8/21	9/23
	Craft good questions for my students	0	0	0	0	2/5	7/18	13/33	10/26	7/18

Table 12 : Teacher Self-Efficacy in Classroom Domain: f/P (N=39)

(Continued)

Note: 1= No Capability, 3= Very Little Capability, 5= Some Capability, 7= Quite a Bit of Capability, 9= A Great Deal of Capability

Table 12 (continued)

Teacher Self-Efficacy in Classroom Domain: f/P (N=39)

What is your level of capability to:		1	2	3	4	5	6	7	8	9
	Manage student behavior	0	0	0	0	4/11	8/21	10/26	9/23	8/20
	Motivate students to learn	0	0	0	0	4/11	4/11	18/46	7/18	6/15
	Implement alternative strategies in my classroom	0	0	0	0	5/13	6/15	11/28	12/31	5/13
	Teach students to think critically	0	0	0	0	3/8	8/21	17/44	8/21	3/8
127	Provide appropriate challenges for very capable students	0	0	0	1/3	5/13	10/26	10/26	7/18	6/15
	Teach students with special needs	0	0	2/5	2/5	6/15	5/13	10/26	7/18	9/18
	Adjust my lessons to the proper level for individual students	0	0	0	1/3	11/28	8/21	10/27	3/8	6/15
	Manage an agricultural mechanics laboratory	1/3	1/3	2/5	1/3	5/13	8/21	8/21	9/23	4/11
	Manage a horticulture laboratory/greenhouse	1/3	1/3	4/10	2/5	11/28	5/13	6/16	4/10	5/13

Note: 1= No Capability, 3= Very Little Capability, 5= Some Capability, 7= Quite a Bit of Capability, 9= A Great Deal of Capability

What is your level of capability to:	1	2	3	4	5	6	7	8	9
Assist students planning FFA banquets	0	0	0	0	2/5	3/8	7/18	10/26	17/44
Assist students in facilitating FFA fundraising activities	0	0	0	0	2/5	4/10	9/23	10/26	14/36
Supervise students during FFA trips and activities	0	0	0	1/3	2/5	3/8	8/21	11/28	14/36
Advise FFA meetings	0	0	0	0	2/5	6/15	7/18	11/28	13/33
Assist students in planning FFA chapter activities	0	0	0	0	4/10	5/13	6/15	13/33	11/28
Assist students in developing community service projects	0	0	0	0	7/18	2/5	11/28	8/21	11/28
Coach leadership based (Eg. Speaking, Parliamentary Procedure etc.) CDE teams	1/3	0	0	2/5	3/8	4/10	7/18	10/26	12/31
Train a chapter officer team	0	0	0	0	5/13	6/15	10/26	9/23	9/23
Assist students in recruiting new FFA members	0	0	0	1/3	3/8	6/15	12/31	8/21	8/21

Table 13: Teacher Self-Efficacy in FFA Domain: f/P (N=39)

(Continued)

Note: 1= No Capability, 3= Very Little Capability, 5= Some Capability, 7= Quite a Bit of Capability, 9= A Great Deal of Capability

Table 13 (continued)

Teacher Self-Efficacy in FFA Domain: f/P (N=39)

What is your level of capability to:	1	2	3	4	5	6	7	8	9
Recruit new FFA members	0	0	0	2/5	3/8	4/10	15/39	7/18	8/20
Assist students in developing an effective public relations program for the FFA chapter	0	0	0	3/8	6/16	1/3	12/31	7/18	9/23
Coach skills based (Eg. Evaluation, Ag. Mechanics, etc.) CDE teams	0	0	1/3	4/10	5/13	6/15	7/18	9/23	7/18
Assist students in preparing a Program of Activities	0	3/8	1/3	2/5	2/5	6/15	11/28	9/23	5/13
Assist students in preparing FFA degree applications	1/3	1/3	1/3	3/8	6/15	9/23	6/15	7/18	5/13
Utilize a Program Advisory Board	1/3	2/5	2/5	2/5	8/21	6/15	6/15	4/10	5/15
Assist students in preparing FFA proficiency applications	1/3	1/3	5/13	3/8	7/18	4/10	8/21	5/13	5/13
Utilize the FFA Alumni	2/5	0	2/5	4/10	9/23	7/18	5/13	4/10	4/10

Note: 1= No Capability, 3= Very Little Capability, 5= Some Capability, 7= Quite a Bit of Capability, 9= A Great Deal of Capability

What is your level of capability to:	1	2	3	4	5	6	7	8	9
Assist students in receiving recognition for SAE projects	1/3	0	0	1/3	4/10	0	14/36	10/26	9/23
Provide career exploration opportunities for students	0	0	0	0	6/15	4/10	13/33	6/15	10/26
Conduct home/SAE visits	0	1/3	1/3	0	4/10	4/10	10/26	8/21	11/28
Supervise student placement SAE programs	0	0	1/3	1/3	6/15	3/8	12/31	9/23	7/18
Make recommendations for students' SAE projects	0	0	0	4/10	4/10	5/13	8/21	10/26	8/21
Assist students in keeping SAE records	1/3	0	1/3	1/3	5/13	4/10	9/23	8/21	10/26
Utilize resources to make recommendations to students' SAE projects	0	0	0	2/5	7/18	6/15	6/15	10/26	8/21
Supervise student production SAE programs	0	0	1/3	2/5	6/15	4/10	8/21	11/28	6/15

Table 14: Teacher Self-Efficacy in SAE Domain: f/P (N=39)

(Continued)

Note: 1= No Capability, 3= Very Little Capability, 5= Some Capability, 7= Quite a Bit of Capability, 9= A Great Deal of Capability

Table 14 (continued)

Teacher Self-Efficacy in SAE Domain: f/P (N=39)

What is your level of capability to:	1	2	3	4	5	6	7	8	9
Show students the value of SAE programs	1/3	0	0	2/5	3/8	6/15	13/33	8/21	6/15
Develop SAE opportunities for students	0	0	1/3	3/7	5/13	7/18	8/21	6/15	9/23
Supervise student entrepreneurship SAE programs	0	1/3	0	2/5	8/21	1/3	10/26	12/31	5/13
Motivate students to have an SAE program	0	0	2/5	1/3	4/10	8/21	11/28	9/23	4/10
Utilize the community to develop SAE opportunities for students	0	0	4/10	3/8	4/10	7/18	11/28	5/13	5/13

Note: 1= No Capability, 3= Very Little Capability, 5= Some Capability, 7= Quite a Bit of Capability, 9= A Great Deal of Capability

How important is it to:	1	2	3	4	5	6	7	8	9
Manage student behavior	0	0	0	0	0	1/3	10/26	6/15	22/57
Provide alternative explanations when students are confused	0	0	0	1/3	0	1/3	6/15	10/26	21/54
Motivate students to learn	0	0	0	0	0	1/3	9/23	9/23	20/51
Implement a curriculum in agriculture	1/3	0	0	0	0	1/3	7/18	11/28	19/49
Craft good questions for my students	0	0	0	0	1/3	1/3	12/31	8/21	17/44
Use a variety of teaching techniques	0	0	0	0	2/5	1/3	10/26	10/26	16/41
Evaluate student learning	0	0	0	0	1/3	2/5	11/28	10/26	15/39
Teach students to think critically	0	0	0	0	4/10	1/3	7/18	9/23	18/46
Provide appropriate challenges for very capable students	0	0	0	0	0	4/10	9/23	12/31	14/36
Teach students with special needs	0	0	0	0	1/3	1/3	15/39	5/13	17/44
Effectively conduct field trips	0	1/3	0	0	0	2/5	7/18	15/39	14/36

Table 15: Teacher Perceived Importance in Classroom Domain: f/P (N=39)

(Continued)

Note: 1= Not Important, 3= Slightly Important, 5= Fairly Important, 7= Important, 9= Very Important

Table 15 (continued)

Teacher Perceived Importance in Classroom Domain: f/P (N=39)

How important is it to:	1	2	3	4	5	6	7	8	9
Respond to difficult questions from my students	0	0	0	0	1/3	3/8	12/31	8/21	15/39
Implement alternative strategies in my classroom	0	0	0	0	1/3	3/8	13/33	8/21	14/36
Use a variety of assessment strategies	0	0	1/3	0	0	6/15	6/15	11/28	15/39
Utilize computers in my teaching	0	0	0	0	4/10	1/3	10/26	12/31	11/28
Utilize multimedia in my teaching	0	0	0	1/3	3/8	2/5	10/26	12/31	11/28
Adjust my lessons to the proper level for individual students	0	0	1/3	0	5/13	1/3	11/28	10/26	11/28
Manage an agricultural mechanics laboratory	0	2/5	0	0	2/5	5/13	7/18	13/33	10/26
Create lesson plans for instruction	0	0	0	2/5	4/10	6/15	8/21	6/15	13/33
Manage a horticulture laboratory/greenhouse	3/8	0	2/5	0	4/10	7/18	6/15	7/18	9/23

Note: 1= Not Important, 3= Slightly Important, 5= Fairly Important, 7= Important, 9= Very Important

How important is it to:	1	2	3	4	5	6	7	8	9
Supervise students during FFA trips and activities	0	0	0	0	0	0	6/15	11/28	22/56
Train a chapter officer team	0	0	0	0	0	0	6/15	12/31	21/54
Assist students in preparing FFA degree applications	0	0	0	0	0	2/5	5/13	11/28	21/54
Assist students in facilitating FFA fundraising activities	0	0	0	0	0	0	8/21	11/28	19/49
Advise FFA meetings	0	0	0	0	1/3	1/3	5/13	11/28	21/54
Assist students planning FFA banquets	0	0	0	0	2/5	0	5/13	11/28	20/51
Assist students in planning FFA chapter activities	0	0	0	0	0	1/3	9/23	9/23	20/51
Assist students in developing an effective public relations program for the FFA chapter	0	0	0	0	0	0	8/21	14/36	17/44
Recruit new FFA members	0	0	0	0	1/3	2/5	4/10	13/33	19/49

Table 16: Teacher Perceived Importance in FFA Domain: f/P (N=39)

(Continued)

Note: 1= Not Important, 3= Slightly Important, 5= Fairly Important, 7= Important, 9= Very Important

Table 16 (continued)

Teacher Perceived Importance in FFA Domain: f/P (N=39)

How important is it to:	1	2	3	4	5	6	7	8	9
Assist students in preparing a Program of Activities	0	0	0	1/3	0	0	8/21	13/33	17/44
Assist students in recruiting new FFA members	0	0	0	0	1/3	3/8	6/15	11/38	18/46
Assist students in developing community service projects	0	0	0	0	0	4/10	7/18	12/31	16/41
Assist students in preparing FFA proficiency applications	0	0	0	1/3	1/3	2/5	8/21	11/28	16/41
Coach leadership based (Eg. Speaking, Parliamentary Procedure etc.) CDE teams	0	0	0	1/3	1/3	0	11/28	10/26	15/39
Coach skills based (Eg. Evaluation, Ag. Mechanics, etc.) CDE teams	0	0	0	0	2/5	1/3	9/23	15/39	12/31
Utilize a Program Advisory Board	0	0	1/3	1/3	3/8	3/8	8/21	8/21	13/33
Utilize the FFA Alumni	0	0	0	1/3	3/8	6/15	13/33	6/15	9/23

Note: 1= Not Important, 3= Slightly Important, 5= Fairly Important, 7= Important, 9= Very Important

How important is it to:	1	2	3	4	5	6	7	8	9
Motivate students to have an SAE program	0	0	0	0	0	2/5	8/21	10/26	19/49
Assist students in keeping SAE records	0	0	0	0	0	2/5	9/23	10/26	18/46
Provide career exploration opportunities for students	0	0	0	1/3	0	1/3	8/21	11/28	18/46
Supervise student placement SAE programs	0	0	0	0	0	1/3	10/26	12/31	16/41
Supervise student production SAE programs	0	0	0	0	0	2/5	9/23	11/28	17/44
Show students the value of SAE programs	0	0	0	0	1/3	0	9/23	13/33	16/41
Develop SAE opportunities for students	0	0	0	0	1/3	1/3	9/23	12/31	16/41
Supervise student entrepreneurship SAE programs	0	0	0	0	1/3	1/3	10/26	10/26	17/44

Table 17: Teacher Perceived Importance in SAE Domain: f/P (N=39)

(Continued)

Note: 1= Not Important, 3= Slightly Important, 5= Fairly Important, 7= Important, 9= Very Important

Table 17 (continued)

Teacher Perceived Importance in SAE Domain: f/P (N=39)

How important is it to:	1	2	3	4	5	6	7	8	9
Conduct home/SAE visits	0	0	0	1/3	1/3	1/3	8/21	10/26	18/46
Assist students in receiving recognition for SAE projects	0	0	1/3	0	0	4/10	6/15	10/26	18/46
Make recommendations for students' SAE projects	0	0	0	0	2/5	2/5	12/31	7/18	16/41
Utilize the community to develop SAE opportunities for students	0	0	0	0	0	4/10	11/28	11/28	13/33
Utilize resources to make recommendations to students' SAE projects	0	0	0	0	2/5	2/5	11/28	12/31	12/31

Note: 1= Not Important, 3= Slightly Important, 5= Fairly Important, 7= Important, 9= Very Important